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IN THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.


*See pp. 17, 18, 20, 22, 119, 121, 123 for catalogs and publications on municipal and civic subjects*

*For Index to Advertisements see page 140*

# PITOMETER'S *Valuable* SERVICES *for* DEFENSE

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will locate hidden leaks and other sources of waste. If *waste* is eliminated, additional expenditures for new pipe lines, standpipes, pumps, etc., may not be necessary.

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# Priorities for Municipalities

## *Will "SPAB" Solve the Dilemma of the Cities?*

IT IS to be hoped that the Supply Priorities and Allocations Board,* just established by President Roosevelt, will speedily help municipalities to escape from the priorities dilemma which now impedes their cooperation in the national defense program.

On the one hand, cities are being prodded to do their utmost to provide the services essential for humane living conditions and maximum output for workers in defense industries; and to prepare also, as urged by the Director of Civilian Defense on page 7 of this issue, for the eventuality that the war may come to this side of the Atlantic or of the Pacific.

On the other hand, many manufacturers on whom municipal officials must rely for equipment and supplies to do these jobs are unable to accept orders, either because contracts already placed by the War and Navy Departments exceed plant capacities or because previous priority rulings as to essential materials prevent full operation of factories normally meeting needs of local governments.

The case for more liberal priorities for municipal needs was stated effectively in *The Toledo City Journal,* of August 2:

"Historians consistently point out that armies are defeated by a lack of organization at home rather than by the superiority of arms in the field.

"A nation that is sick in its civic, industrial and commercial life, a nation that is not able to keep the machinery of production and transportation working smoothly, is one that is marked for defeat in any major conflict, irrespective of how many men and cannons are put in the field.

"Cities, in turn, are the agencies by which the commercial and business life of the community functions. Cities are needed for the maintenance of highways and water lines, of sewers and power lines, of communication cables and alarm systems, so that large groups of people can crowd about production centers to turn out the necessities of war and move them to the front.

"Concerning all these things there can be no argument. Therefore, it is obvious that the health and efficiency of a city government, the agency under which these important functions are to be nurtured and maintained, are quite as vital to defense as the cannon that is swung skyward to blot out a soaring bomber.

"It is important that health services be maintained, that medical supplies be kept at hand, that paving programs can be carried out, that streets can be swept and treated with chemicals, or washed, that trees may be saved, that water systems can be kept up to the ultimate in perfection, that new water lines and alarm conduits may be laid, that radio equipment be available, that motor equipment be supplied expeditiously and in whatever quantities may be deemed necessary, that business machines of the latest types may be had as the need is discovered.

"In fact, it is important that every supply or every bit of equipment a city may consider essential to its smooth operation be made available during this emergency with as little effort as possible. . . .

"It is obvious that before many months there will be an acute shortage of labor. The nation will concern itself with every possible means of obtaining the very greatest amount of production out of every worker in the land.

"Thus laborers, white-collared and manual, will be drafted away from the forces of municipalities to produce war material. If the cities then are to maintain the services that will be essential to defense, they will have to turn more and more to machinery to do the work of hands. . . .

"Toledo at this time seems to have plenty of labor to meet all of its major demands. But no one can believe that this condition will continue long. It is almost certain that before many months elapse, the city of Toledo, as every other employer, will be crying for labor.

"When that time comes, it is probable that the city will turn very naturally to machines to save the labor of men and women, in its offices, in the street department, in engineering offices and the water division. But it seems that it would be so much more reasonable to lift restrictions from city purchases now, so that local governments may go ahead unimpeded in replacing worn equipment and devices. . . .

"It is important that American cities be given every opportunity to make themselves the epitome of efficiency. That is the best national defense possible and it will heighten and intensify the respect for democracy and add to its security."

### Maintenance and Repair Rating Plan

Evidence of some recognition by the Office of Production Management of the present situation confronting municipal governments was given in a "Maintenance and Repairs Rating Plan," promulgated on August 8. Under this order a preference rating of A-10 will be assigned to various industries and services, after the approval of their application, "but other ratings, either higher or lower, may be assigned in any case from time to time hereafter." Industries and services affected by this order of special interest to municipalities include:

Protective services (fire and police)

Utilities—electrical energy (production and distribution), gas production and distribution (manufactured and natural), water production and distribution, sewer service

Common carriers (common carrier passenger transportation by urban, suburban, and interurban electric railways; also by urban and suburban motor and electric coach)

### How to Qualify

The above-mentioned OPM notice of August 8 stipulates that:

"Any person (which term includes any individual, firm, corporation, or other form of enterprise) engaged in one of the above-described activities who finds that he is unable to provide for his maintenance and repairs without the assistance of the Plan may secure an application Form PD-67, applying for a Maintenance and Repairs Preference Rating Order to be issued to the applicant, by writing to the Director of Priorities, Attention Maintenance and Repairs Section, 462 Indiana Avenue, Washington, D. C. If the Division of Priorities, after considering the application, believes that in the interest of national defense the Plan should be made applicable, it will issue an Order assigning to the applicant a preference rating for his maintenance and repairs."

A previously issued order, promulgated on July 1 by Administrator Leon Henderson of the Office of Price Administration and Civilian Supply (see THE AMERICAN CITY for August, 1941, page 42), attempted to give priorities to various municipal requirements. This ruling has proved ineffective in many cases, however. The hitch, as seen by a leading manufacturer of automotive machines for street and catch-basin cleaning and refuse collection, is explained in a letter to this magazine, dated August 29:

"We are told by plant engineers that a priority from Washington to municipalities is of no value when municipalities quote that priority number to industries from whom they are hopeful of obtaining equipment, for the reason that under the present set-up, suppliers of materials to manufacturers of equipment will not recognize a priority number unless that priority is one extended directly to the manufacturing industry that is making the material purchases."

Apparently the OPM order of August 8 will partially correct this impasse, but municipalities may do well to ask further aid from the newly created Supply Priorities and Allocations Board.

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* The Supply Priorities and Allocations Board was created by President Roosevelt on August 28 with new and sweeping powers to fix priorities and allocate the supply of materials, fuel, power and other commodities of all kinds to meet the demands of the Army, the Navy, the defense-aid program, the policies of economic welfare and the needs of the civilian population.

Its Executive Director is Donald M. Nelson, also appointed OPM Priorities Director.

Members of the new Board (SPAB) are:

Henry A. Wallace, Vice President of the United States.

William S. Knudsen, Director General of the Office of Production Management.

Sidney Hillman, Associate Director General, OPM.

Henry L. Stimson, Secretary of War.

Frank Knox, Secretary of the Navy.

Harry L. Hopkins, Special Assistant to President Roosevelt.

Leon Henderson, Federal Price Administrator

# *Rushing Construction—* SPEEDING PRODUCTION

CLATTERING air hammers, roaring bulldozers and clanging well casing noise dins the air throughout the country. Defense projects are being rushed—production is going up,—up—and up! But the entire program is moving on a simple life necessity—Water!

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Keyed to the ever increasing and extremely urgent need for speed in production is Water! And wherever the Pump and Well is of Layne build, there you will find dependable performance no matter how heavy the load or prolonged the run.

Never has the Layne Organization been so keenly alert to its task of producing great quantities of water with utmost speed. Never has it been operating more efficiently. If you need more water to further speed production, write or wire

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# Our Municipal Notebook

## Self-Liquidating Off-Street Parking Facilities

TWO important reports published in the July issue of *Public Roads** and condensed in the Traffic Control and Facilitation Section of this issue of THE AMERICAN CITY, emphasize storage of inactive vehicles as a major problem of highway transportation that increases in importance toward congested areas. The lack of such storage facilities is a principal cause of traffic congestion. Attention is focused at the moment squarely on defense areas where all effort must be put forth to make the greatest possible use of trucks and passenger vehicles, to move them without delay and with minimum consumption of gasoline.

### Menace of Unorganized Parking

Highway departments are concerned because unorganized parking on traffic arteries that are extensions of main highways passing through towns and cities introduces a series of traffic bottlenecks that seriously impede efficient and legitimate use of these important roadways. Since, like a great river, main traffic arteries drain large areas, feeder roadways are likewise important. Thus, to highway and defense officials, storage of inactive vehicles is a problem of crowded areas and not merely one of individual streets and highways.

It is apparent that many of our major traffic arteries fail to provide the transportation service for which they are intended, because of inefficiencies that could be corrected. THE AMERICAN CITY notes with interest that the Public Roads Administration and other official bodies are giving increasing attention to the facilitation of the use of roadways as well as to the construction of new ones. From this standpoint it is unfortunate that the $320,000,000 Federal strategic and access highway act failed. It would have provided means to make a start toward a broad-scale solution of this problem of vehicle storage which, while general to the Federal Government, is nevertheless specific and often critical in communities where the act would have permitted an attack on a broad scale. However, while the new Act does not provide funds for the creation of off-street parking facilities in defense areas, these objectives still seem possible of attainment.

Off-street facilities for the storage of inactive vehicles are as needed a public utility as the roadways. There seems to be no reason why they should not be self-liquidating projects if properly handled: (1) as a direct municipal operation; (2) as a municipally subsidized operation; (3) or wholly financed by private capital.

Off-street facilities could be financed by Federal funds, as self-liquidating projects. Private capital, of which there is an abundance, should be encouraged to take advantage of extensive opportunities for investment and for the protection of property and other values. Thus that object of the Act, vetoed by the President, might be achieved more extensively and quickly than was initially contemplated.

It is wholly logical that a service fee, proportionate to the accommodation, should be charged to those using such facilities, and it is equally reasonable that, in those cities where metered parking is employed, revenues in excess of cost of operation and supervision be allocated directly to traffic improvements. Thus the pressing and growing need for off-street parking and storage facilities, contemplated by the original bill, seems possible of reasonably prompt satisfaction. There is no reason why they should not be self-liquidating and even profitable investments.

*Apply to Superintendent of Documents, Government Printing Office, Washington, D. C.; 10 cents.

### From the U. S. Director of Civilian Defense

To the Editor of
THE AMERICAN CITY:

**The fire chiefs of our large cities and of all cities harboring important defense industries were never more in the spotlight than they are now. Their job of building up a fire-fighting unit of unprecedent efficiency must have the backing of mayors, city councils or commissions, and the civic and business people of these communities.**

F. H. LA GUARDIA,
U. S. Director of Civilian Defense.
Washington, D. C., August 13, 1941.

## *Machine Accounting for Municipalities*

OFFICE ROUTINE is losing its dullness as an increasing amount of it is performed by adding, calculating, bookkeeping, accounting, tabulating machines. During the last three or four years especially, city government departments have recognized and accepted the fact that machine accounting is inevitable, and moreover very much to be desired.

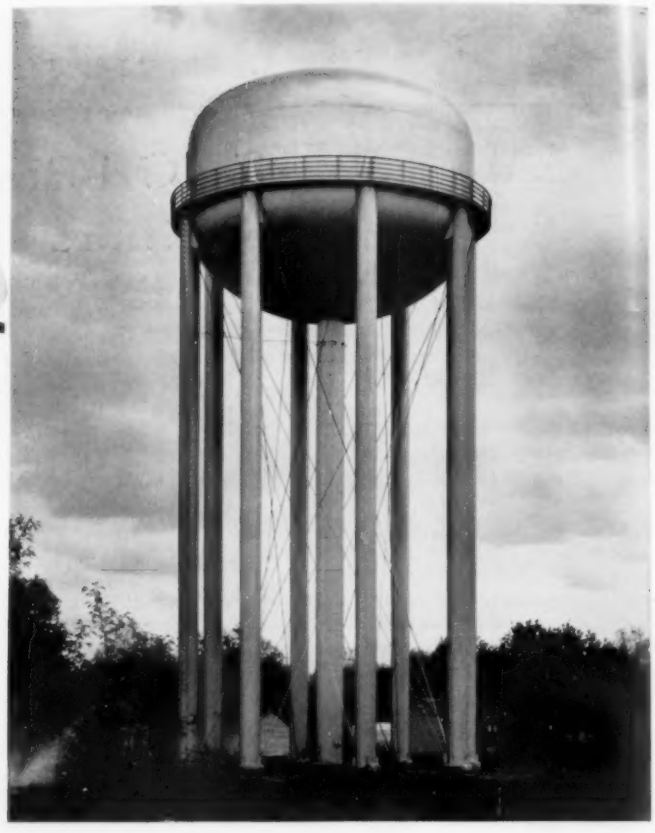
The current question is not so much "Shall we install accounting machines?" as "What type of accounting machine should we get?" That is "The Key to Better Municipal Control"—which, incidentally, is the title of a succession of flashes of Remington Rand municipal government installations, including Atlanta, Battle Creek, Chicago, Cleveland, Columbia, S. C., Denver, Greenwood, S. C., Lincoln, Nebr., Milwaukee, New London and New York, Sacramento and San Francisco; with references to many other mechanizations from Los Angeles to Valley City, N. Dak., and from Redlands, Calif., to Ruston, La.

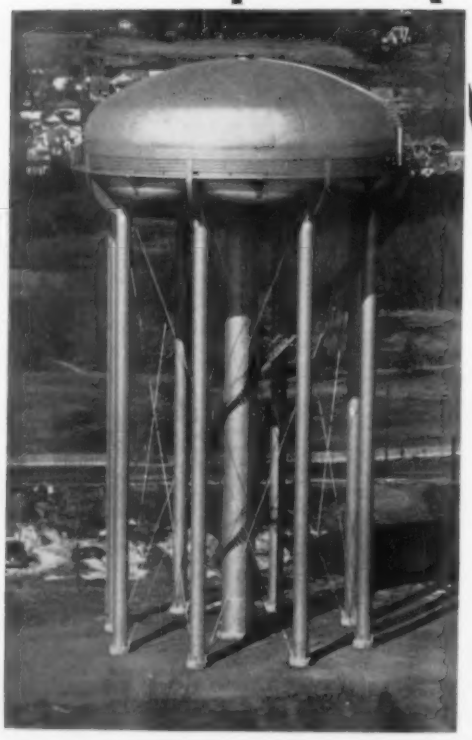
One of the most popular Remington Rand bookkeeping machines for municipalities is Model 85, which accumulates vertical totals, computes cross-balances, and gives a proof of the accuracy of each line entry. The exceptional quality of this type of machine for municipal water and electric accounting was brought out in a series of articles directed by Harry Barker, consulting engineer, in the April, May, July, and August, 1938, issues of THE AMERICAN CITY. It is used in Tupper Lake and Ilion, N. Y., population 5,000 and 10,000 respectively. Cook County, Ill., uses 75 of them in the preparation of the Land Lot Ledger, Special Assessment Ledgers, and to distribute taxes to more than 400 taxing bodies, including those of the city of Chicago. That city uses four machines of this model on budgetary accounting. It is used on general accounting at Cleveland; on water billing at Buffalo; for posting tax payments in New York City; for making bill, ledger, and tax roll for Columbia, S. C. There are important installations in the cities of Dunkirk, Salamanca and Greenport, N. Y.

The effective brain doesn't load itself or its associates with any production which a machine can perform more expeditiously and accurately.

LOOKING AT IT

FROM ALL ANGLES





*Modern*
ELEVATED STORAGE
is *HARD TO BEAT!*

WHEN it comes to securing more uniform distribution pressures—lower pumping costs—increased protection against fire hazard—and all around improvement in service to municipal and industrial water consumers, it's hard to beat the efficiency and economy offered through the use of modern elevated storage. The two "Colonial" design units illustrated here are typical examples of the modern, attractive appearance being attained in Horton elevated storage tanks. Both tanks are installed in the Kalamazoo, Mich., water supply system. The one illustrated above has a capacity of 350,000 gals., and the unit at the left has a 750,000-gal. capacity.

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New York...3308-165 Broadway Bldg. Boston...1501 Consolidated Gas Bldg. Houston.....5601 Clinton Drive
Cleveland...2236 Builder's Exchange Birmingham....1502 N. Fiftieth Street Tulsa.....1625 Hunt Bldg.
Detroit.....1501 Lafayette Bldg. Havana.....402 Edificio Abreu Los Angeles.....1403 Wm. Fox Bldg.

*Plants at* BIRMINGHAM, CHICAGO, and GREENVILLE, PA. *In Canada:* HORTON STEEL WORKS, LIMITED, FORT ERIE, ONT.

During September we hope you will remember to mention THE AMERICAN CITY.

# Protect Your Water Supply

## *Cucumber Bitters Bring Water Jitters*

DURING THE WINTER AND SPRING MONTHS of the past two years considerable trouble with the characteristic cucumber taste and odor has been experienced in several of the water-treatment plants from south to north and east to west. Because of the almost universal trouble, "Over the Spillway," the interesting publication of the Division of Sanitary Engineering, Illinois Department of Public Health, has published the following information on the causative organism.

This organism is commonly known in the sanitary field as Synura and is placed in the group commonly known as Protozoa. Also it is common at the same time to have high bacterial counts as well as Cyanophyaceae, Chlorophyaceae along with Diatoms, some higher plants, worms and rotifers. No reference has been found to their inhabiting grossly polluted water. They are present in swamps, ponds, stagnant water, etc., and literature on the subject refers principally to this organism's inhabiting waters that are beginning to purify and where mineralization is being approached.

Synura utilizes organic substances in solution for food, and most writers doubt the ability of the organism to ingest solid particles as food, but they utilize the decomposed organic material as food. They seem to infest puddles, ponds and sluggish streams, multiplying plentifully in the spring. As the ponds dry up or cold weather approaches, they settle to the bottom and become encysted, and will become active again when water is encountered or warm weather approaches. The spring rains wash the cysts around until the favorable weather or moisture of the water causes them to become active again. This may account for the sudden and unexpected onslaughts of the organisms, since they may remain in their cysts in cold weather, being washed around until favorable circumstances cause them to become active in entirely new places. Reproduction of this organism may take place in a quiet, though not active, stage. The cells may reproduce in twos or in multiples. The reproduction may take place by cell division. It is not definitely known just how Synura develops, but it could be in the cyst stage, which would be an explanation for the sudden occurrences of the Protozoa.

*A 500,000-gallon double ellipsoidal steel tank built for the city of Hayes, Kans., by the Pittsburgh-Des Moines Steel Co. The tank is 50 feet in diameter and its high-water line is 119 feet above the top of the foundation*

Tastes imparted to water by Synura are due to the protoplasm which upon disintegration of the cells is set free, imparting a bitter cucumberish or cod-liver-oil-like taste and odor.

Copper sulphate in doses of one to two pounds per million gallons are reported to destroy Synura. In Illinois, however, from plant experiences it appears that the application of chlorine in very high dosages from 5 to 10 parts per million is necessary. It should be remembered that a mere killing dose is liable to cause intensified tastes and odors due to the liberation of the oils from dead cells, and other treatment must be employed to combat this. Activated carbon, chloramines and superchlorination are recommended for this purpose.

## *Projects to Protect New York Water Supply*

GAPS BETWEEN SHUT-OFF VALVES in old water lines, and the installation of valves at 1,000-foot intervals in new mains is being carried on under the direction of the Department of Water Supply, Gas and Electricity, New York City, to guard against serious interruptions of the water supply through accidental or deliberate breaks in the mains. Between 35 and 40 per cent of the work is being done in the borough of Queens. Although valve installation is part of the program for normal improvement of all water-supply facilities, the work will make some protection to defense through giving added protection from flood and fire. New York City at present has more fire hydrants and shut-off valves than London had at the outbreak of the war, according to Commissioner William H. Correale, in spite of the much larger area of the British metropolis.

During the spring of 1941, shut-off valves were installed in one of the largest of the arterial mains in the borough of Queens, serving communities of the north central section of the borough. When the main was installed in 1906, it passed largely through open country, and for reasons of economy, was insufficiently provided with valves. For a distance of more than 3 miles there has been no means of shutting off the water from the 36-inch main in case of a break. As communities have built up swiftly in recent years along the main, this situation became a menace. Relief labor crews have installed four large shut-off valves at convenient intervals, using horizontal cast-iron valves, each 10 feet long and weighing 5 tons. As it is impossible to interrupt the water supply to many of these communities along the line for any long period, it was a difficult problem to plan and carry out the work. In each case the main was cut through, the valve installed, and service resumed in seven or eight hours. In another place cutting-down a highway grade had left a main with only 9 inches of cover. It was necessary to lower a 375-foot section of the main a distance of 3 feet through a network of other utility lines without interrupting the flow of water.

Distribution mains from 8 to 20 inches in diameter provided with shut-off valves every 1,000 feet are now being installed by WPA throughout the city. During the past 12 months this organization has installed approximately 230,000 feet of mains and about 570 fire hydrants in the borough of Queens alone. Added protection has been provided for new structures at Fort Totten, LaGuardia Field and elsewhere throughout the city.

**Water is the Lifeblood of Industry and Domestic Activity. Guard It Well!**

## CLOW-NATIONAL

# *Super-deLavaud* Cast Iron Pipe

Yarning the Joint

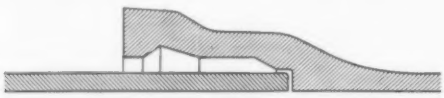
Pouring the Joint

Calking the Joint

CLOW-NATIONAL Super-deLavaud cast iron pipe is centrifugally cast in water-cooled steel molds WITHOUT CHILL. It is a superior pipe with a dense close-grained metal structure free from blow-holes, sand or slag inclusions. The pipe wall is of uniform thickness from end to end, and inside and outside diameters are true circles—absolutely concentric. Super-deLavaud pipe is a tough pipe with unusually high tensile strength combined with great ductility. It is highly resistant to shock, and its physical properties meet the requirements of Federal Specifications WW-P-421 for Type "I" cast iron water pipe.

The deLavaud pipe casting machines, in which Clow-National pipe in sizes through 24-inch are made, exercise positive control over the outside diameter of the pipe, while the pipe wall thickness and inside diameter can be readily varied to meet any specification. Super-deLavaud cast iron pipe can be cut easily with sledge and chisel, and drilling and tapping it for branch lines results in superior threads and perfect connections.

Available with ten individual types of joint, Super-deLavaud cast iron pipe can be furnished to meet the specific needs of any pipe line job.



Standard Water Bell

A self-centering shoulder in base of bell eliminates wedging and keeps each pipe in good alignment with all others in the line. This means faster and better calking, a saving of joint materials, and a better joint.

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# Street Construction and Maintenance

*Using the Newly Developed Roller for Applying the Separating Agent to the Surface for Brick Paving*

## New Aids to Peeling Asphalt from Brick

THE SURFACE REMOVAL METHOD in brick pavement construction has been in successful use for many years. Too often in the past, however, the separating agent was permitted to flow between the bricks where it prevented the desired adhesion of filler to the sides of the brick. The devising of a means to confine the separating agent application to the brick top engaged the attention of the National Paving Brick Association Research Bureau for some time.

Knowing that the agents commonly used were mobile liquids which readily flowed between the bricks, the first step was the development of an agent of such viscous nature that such flow would not occur. Experiments developed a mixture of water 64 per cent by weight, 31 per cent calcium chloride, and 5 per cent starch, giving the desired viscous property. The preparation is secured best by mixing the starch and the water and then adding the calcium chloride with stirring. In this way the heat of solution of the calcium chloride aids in a thorough digestion of the starch.

A roller device was then designed to apply the agent. The roller is a solid wood cylinder 6 inches in diameter and 20 inches long, covered with a 1-inch-thick sponge rubber sleeve, from the outer surface of which the rind or skin has been removed to expose the pores. Suspended above the roller is a wooden feeding hopper, the bottom edges of which are trimmed with flexible rubber squeegee wipers. The hopper is adjustable vertically so that there is proper contact with the sponge rubber sleeve. A quantity of the separating agent is placed in the hopper, and the device is rolled over the brick course. The roller in passing under the hopper receives a controlled coating of the agent, which is in turn deposited on the top of the bricks.

The experience thus far gained shows that the roller may be used with agents ranging from mobile liquid to a paste or jelly. This experience also shows that insurance against the flow of the agent down the brick sides may be secured only by the use of a very viscous or non-flowing agent.

## Concrete Center Lines for City Streets

IN HOUSTON, TEXAS, after considerable experimentation with different types of cement, the Public Works Department has standardized on an 8-inch standard portland cement center line. This is poured at the same time the base is poured, so that it acts as a center stripe when the asphalt surfacing is placed. Asphalt surfacing in Houston consists of rock asphalt, an asphaltic concrete with crushed gravel aggregate, and a considerable yardage of an asphaltic paving material with washed oyster shell aggregate.

## Street Maintenance in Fort Wayne, Ind.

THE TOTAL MAINTENANCE COST per square yard of asphalt pavements for 1940 in Fort Wayne was 0.72 cents or $0.0072. This cost is equivalent to $84.48 per mile for a pavement 20 feet wide. The average age of the pavements repaired in 1940 was 24.5 years.

The following tables show the repair material used by months and the days of repair operation as well as costs:

| 1940 | Tons New Asphalt Mixtures | Days Repair Operation |
|---|---|---|
| January | 17 | 7 |
| February | 51 | 17 |
| March | 131 | 20 |
| April | 151 | 23 |
| May | 122 | 21 |
| June | 95 | 19 |
| July | 229 | 23 |
| August | 313 | 23 |
| September | 153 | 20 |
| October | 190 | 23 |
| November | 99 | 15 |
| December | 95 | 20 |
| Total | 1,646 | 231 |

| | |
|---|---|
| Total tons new asphalt mix manufactured and used | 1,646 |
| Total days actual repair operation | 231 |
| Average age (years) of all asphalt pavements, 1940 | 24.5 |
| Total area of asphalt pavement under maintenance (sq. yds.) | 2,720,622 |
| Payroll (tests, supervision, manufacture, transporting, placing mixtures) | $19,115.29 |
| Total materials supplied for the year 1940 | $10,704.98 |
| *Total* | $29,820.27 |

W. H. DROEGE,
Asphalt Superintendent and Materials Chemist, Fort Wayne, Ind.

# Oyster Shell Road in Florida

*Grading an Oyster Shell Base with a Caterpillar Diesel No. 212 Motor Grader Owned by the City of Fort Myers, Fla.*

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Used as a clarifier it is capable of reducing suspended solids to a minimum; as a softener it will reduce hardness to 1½ to 2 grains in less than one hour.

Study the diagram below and consider the opportunities for accelerated performance and operating economy provided by these exclusive Graver features:

1. **Upward Sludge Filtration.**
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3. **Accurate meter control of chemicals automatically adjusting charge to flow of water.**
4. **Proportion of chemical ingredients varied by simple manual adjustment to meet varying quality of raw water.**

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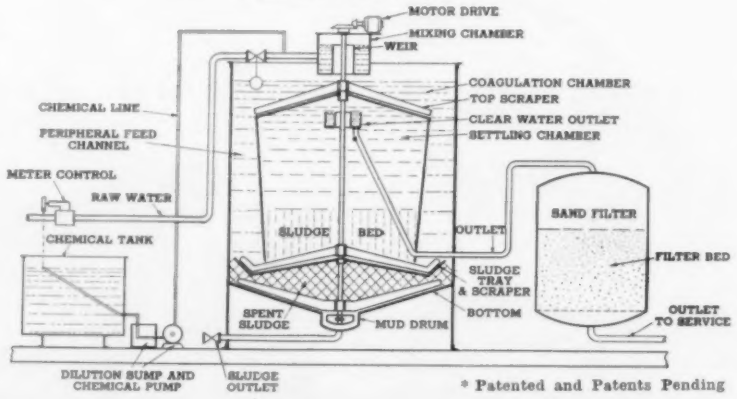
Diagram of Graver Reactivator with Chemical Tank, Proportioner and Filter.

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# Refuse Collection

## *Better Collection by Borough; Rates for Service*

THE BOROUGH OF NORTH CHARLEROI, PA., with a population of about 3,000, has changed from contract to borough collection of garbage. Four years ago the borough found it necessary to take over the work because of the high cost and low quality of the services performed under contract. The new system is entirely on an annual-fee, self-supporting basis. Each family which takes advantage of the service pays $3 per year for weekly removal of all its garbage. Businesses are charged $6 per year for one weekly collection, and $10 per year for two collections per week. Approximately 430 families and business places take advantage of this service, and the total receipts from their payments are approximately $1,200 per year. During the last three years the cost of performing this work has been approximately $1,000 per year, with the result that there is now a satisfactory surplus in the disposal fund.

Borough-wide collections are made each Friday, and a second collection is made on Mondays from those business places that pay the $10 rate. Householders are instructed to place their garbage cans in their back yards near the alleys, and one truck driver with two helpers to load the truck perform the work. When the amount of garbage is especially large, two extra men from the relief rolls are sometimes used. In one day these men are able to cover the entire borough, removing from seven to eight truckloads of garbage. Before the new system was installed, the amount removed was seldom more than two truckloads.

Not only does the new system render better service to the people of the borough, but it has been estimated that each family saves from $7 to $10 per year and the average business from $12 to $18 per year. The enthusiasm with which this plan has been received is indicated by the fact that, although participation is voluntary, 93 per cent of the families are expected to contract for this service during the present year.

—From *The Borough Bulletin* of the Pennsylvania Government Administration Service.

## *The Chief Difference Is Not the Odor*

THE LATEST REPORT of the city government of Escanaba, Mich., entitled "The Depression Years, 1929-1939," states that per capita expenditures in the United States for one year for perfume amounted to $6.06. For the same year Escanaba spent $.19 per capita for garbage disposal.

—As reported in the *Michigan Municipal Review*.

## *Refuse Collection in Waukegan, Ill.*

THE CITY OF WAUKEGAN has owned and operated a refuse-collection service since 1932. Garbage, rubbish and ashes are regularly removed twice each week from the homes of 8,036 families, or 97.26 per cent of all families in the city. A total of five trucks are used in this service, which requires eleven employees, including one dump attendant. Each truck makes an average of 536 stops per day, resulting in a collection of 6,270 loads of refuse in 1940. This is equal to 39,840 cubic yards.

The total operating cost for municipal refuse collection in Waukegan in 1940, including labor, gasoline, oil, equipment, maintenance, repair, insurance, etc., was $24,128.17. This figures 60.6 cents per cubic yard collected, or $3.00 per family served. The cost of collection per capita was 72 cents. It is interesting to note that if the total tax bill of a Waukegan home owner at present amounts to $56 per year, the tax cost for garbage collection and disposal is only $1.50 per year, which formerly was the charge per month, under private collection. The cost of a single collection at present is slightly less than 3 cents, which means that for this small sum this city department goes to the average citizen's home, carries out his accumulation of garbage, ashes and household rubbish, and transports it an average of 2½ miles to the city dump, where it is disposed of under city supervision.

## *Collectors' Uniforms Build Morale*

THE WEARING OF UNIFORMS by refuse collectors is required by many cities and has undoubtedly done much to increase the morale of workers as well as the attractiveness of the service to citizens and visitors. In an article in the January, 1941, issue of THE AMERICAN CITY, E. A. Baugh, Director, Department of Public Works, Dallas, Texas, gave costs of uniforms and cleaning, and stated, "We have found the use of uniforms a distinct contribution to the morale of the organization."

According to the American Public Works Association, other cities requiring uniformed refuse collectors include Austin, Texas; Brookline, Mass.; Erie, Pa.; Los Angeles, Calif.; Montclair and New Brunswick, N. J.; New York, N. Y.; Topeka, Kans.; Youngstown, Ohio; Montreal, Ottawa; and Outremont, Canada.

Uniforms are furnished by the city in Austin, Brookline, New Brunswick, and the three Canadian cities. The company contracting for the collection of refuse in Topeka furnishes the uniforms. In New York City and Erie, Pa., however, the uniforms are bought in quantity lots by the city and sold to workers at reduced prices. Uniforms worn by refuse collectors in most of the cities are of dark material, usually khaki but sometimes dark blue. Several cities have special uniforms for summer and winter. Details of the care of uniforms in Dallas, Texas, will be found in THE AMERICAN CITY.

## *Garbage Service Costs in Jacksonville, Fla.*

DAILY GARBAGE COLLECTION AND DISPOSAL SERVICE cost Jacksonville citizens only $7.01 per family from the general tax fund in 1940, or 58 cents a month, according to the annual report of the Street Cleaning Department. Broken down further, the cost was $1.55 2/3 cents a person for the year, or 13 cents a month per capita.

These costs included the hauling, burning, and disposing of all garbage, grass, leaves, brush, sand, sweepings, ashes, cans, logs, stumps, and dead animals. Jacksonville families threw away in their garbage receptacles an average of 7,395 pounds of garbage and trash for the 12 months, or approximately 616 pounds per family per month. This meant that the Department collected, hauled and disposed of 16,373,046 pounds more garbage and refuse during 1940 than in 1939. In spite of this, there was a slight decrease in the cost per ton. In 1939 the cost was $1.77 per ton as against $1.755 for 1940. For disposal alone, the per ton cost was cut from 42.5 cents to 41.5 cents.

**On the Program!**
**Refuse Collection and Disposal**
**American Public Works Convention, Oct. 19-22**

# THE GAMEWELL POLICE SIGNALING SYSTEM

## *A Major Defense Against Crime and Fire*

The system includes the telegraphic code signaling, telephone, and recall features, all basic elements in police communications and contributes to public safety by ensuring an adequate patrol of the policed area and fire district. And, by providing for the swift and convenient transmission of emergency signals in cases of accident, riot, or serious crime, protects both the citizens and the police. Traffic police and other officers on fixed posts are enabled to promptly report accidents and other emergencies without leaving their posts. The recall feature enables the central station to call the patrolmen individually or collectively or to transmit to them instructions in secret police code.

A recognized factor in fire protection, the system also lends itself readily to the extension of police protection and supervision to industrial establishments, banks, hotels, and other special hazards. Citizens are also enabled to quickly secure police assistance.

### A MUNICIPAL UTILITY

Invaluable as a defense against fire and crime the system is a municipal utility of exceptional merit, providing a readily accessible telephone service for all municipal employees such as maintenance men of the various departments as well as for private watchmen, mercantile police, and special officers outside of the police department.

•

**Type CX Police Operating Desk.** The automatic recording outfit with time and date stamp is mounted on top of the cabinet and displays the recorded signals in full view of the operator. The desk and cabinet are of art metal. The manual transmitter at the right of the operating panel provides for a multiplicity of recall signals in code to the patrol force and for the transmission of emergency signals to the garage, hospital, and fire department. Simplicity and efficiency of operation characterize this type of desk.

### Police Patrol Box—Exemplar Type

Equipped with three calls — Report, Emergency, and Telephone. The telephone service may be made to connect through the police central station with all police bureaus, officials, and other municipal departments. Multi-call boxes capable of transmitting from four to seven code signals are also available.

### Police Recall Signal

The signal light is contained within a red Fresnel lens supported by a cast aluminum body. The dark shade contributes to effective signaling both by night and by day.

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# Public Safety

## Los Angeles Doubles Motorcycle Force

"Perhaps the Most Stringent Examinations ever conducted within the Los Angeles Police Department," says an official bulletin, are those which selected 175 motorcycle officers recently. These officers must be free of any physical or visual defect which might make them a hazard to themselves or others. The aims of the examinations are (1) to protect motor riders from collisions and (2) to obtain even-tempered men capable of enforcing the city's traffic laws.

After a mental aptitude test of higher than average standards, a special medical examination is given. Applicants are subjected to a battery of vision and coordination tests: color blindness; peripheral or "side" vision; susceptibility to glare blindness; "tunnel" vision; depth of vision; visual acuity or sharpness; near- and far-sightedness; astigmatism; brake "reaction time"; steering ability; eye-mind-hand coordination; right- or left-eyedness. Any limitation found is called to the attention of the subjects so they may compensate for it. If that is impossible, applicants will not be permitted to ride. Next comes an oral quiz designed to select those officers best fitted by temperament and natural ability to operate under the trying conditions of traffic enforcement work.

Those who pass the preliminary tests are sent to a three-week traffic school, to learn the principles of safe riding, "selective enforcement," and those physical laws applicable to the operation of motor vehicles. Finally come practical riding tests and a stiff examination on the vehicle laws, both local and state. Deputy Chief Bernard R. Caldwell, Director of Traffic, reports the first group of riders were on the streets late in June. The addition of the newly trained officers will more than double the present effective force available for motorcycle patrol duties.

### Traffic Deaths Down in Los Angeles

In the face of rising business indexes, increased car registrations, buying power, gasoline consumption, and vehicle mileage, the traffic fatality trend is downward in Los Angeles. For the first time in many months, the figures have dipped below those of the previous year. Pedestrian fatalities have dropped 4 per cent, and all deaths are down nearly 1 per cent. After a deadly Memorial Day week-end during which seven died, Los Angeles went for an unprecedented five days without a single fatality.

Motor-vehicle fatalities in 24 weeks in 158 cities reporting to the U. S. Bureau of the Census totaled 4,145 in 1941 and 3,691 in 1940, a rise of 11 per cent. Of these, 2,994 and 2,731 respectively happened within the city limits, a rise of 9 per cent.

Many factors have contributed to the reduction in Los Angeles. Increased enforcement and splendid cooperation from courts and city attorney deputies are making substantial inroads into local driving habits. In addition, of drivers involved in crashes, five times as many as formerly are now being hailed into court to face a traffic charge, as a result of the application of scientific collision investigation techniques by trained police. These charges range all the way from "failure to give a hand signal" to "negligent homicide" or killing by auto.

## *Public Money for Parking Lots*

The Parking Problem, national headache No. 1, is finding its way into state and Federal legislative halls. California, Iowa, Kansas, Maine, New Hampshire and North Carolina, have enacted statutes this year giving municipalities authority to acquire and operate automobile parking lots.

The Federal Defense Highway Act of 1941, recently reported to the House of Representatives, admits the national significance of the problem by providing the use of Federal road funds for acquisition of off-street parking facilities.

Information concerning state parking statutes and approximately 300 other highway user laws are contained in the Number Three 1941 Laws Bulletin released by the National Highway Users Conference.

The parking problem is becoming more acute daily through the concentration of workers in defense areas and especially at Army and Naval reservations and defense industry sites located away from adequate public transportation facilities. The National Highway Users Conference says this means definitely that shortages of parking facilities are no longer confined to metropolitan areas.

*The effective strength of the Los Angeles Motorcycle Squad has been raised from 50 to 115, requiring 70 new motorcycles*

## *The Voice of the People*

***(as expressed by public officials)***

¶*"The new transit equipment has appreciably increased efficiency and value of the service. Riders have expressed their genuine pleasure."*

¶*"Better schedules help workers at industrial plants."*

¶*"The new cars have rejuvenated mass transportation."*

¶*"Real estate values are rising around streets with electric trolley coaches."*

¶*"New cars improve transportation facilities and give the city a smarter appearance."*

WHEN the Mayor displays his city to the visiting chief ex tive, you can be sure that they'll talk about the street tra system. Where modern streetcars and trolley coaches are in there's usually a prideful boast about these new vehicles.

The "home town" mayor will probably tell how increased payl make possible better service. He'll mention quieter streets, less tra congestion, and improved real estate values. And he'll point pride to the smartness of his city streets with these attractive cars coaches. Above all, he'll emphasize that the citizens heartily end the speed, comfort and safety of the city's new electric vehicles.

We will be glad to send you interesting facts showing what tra modernization means to people in 33 cities throughout the coun And when you're ready, Westinghouse will be glad to co-operate your transit company in your city's modernization program.

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Vol. LVI, No. 9 The American City September, 1941

# Underground Booster Stations Feature Dual Water System

## *Winchester, Mass., Supplements Surface Water Supply with Large Well Field; Has Two High-Service Units*

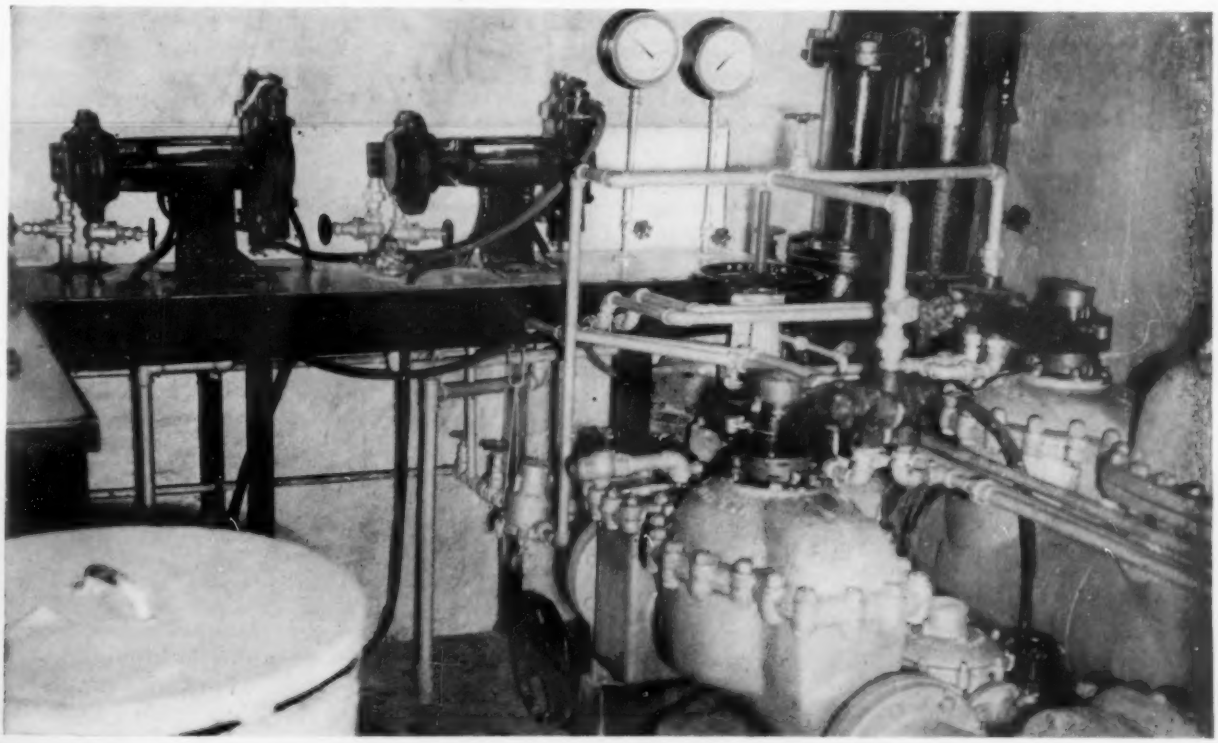
IT WAS civic pride rather than national defense that put two of the four water booster pumping stations underground in Winchester. The town is in a valley and, as residential property was developed along the high land on two sides of the center of the community, increased pressures were required for these services. Two steel standpipes on the east side provide 750,000 gallons storage for high service, and one concrete tank of 220,000 gallons capacity is located on the west side served by booster stations on the gravity system.

*The "Dog House" at the Symmes Park booster pumping station is all that is visible at the surface*

By Theodore Reed Kendall
Engineering Editor,
The American City

### The Booster Stations

There are four booster stations, two for each high-service system. This is done as a measure of safety so that there will be no interruption in the supply if one station fails, or if there is an unusually heavy drought in summer when a



*The underground pumping station with meters and treatment equipment is shown below*

*The Access Hatch to the High Street Booster Station Located Under the Street*

great deal of water is used on lawns.

The Symmes Park booster pumping station is the outstanding feature of the system, inasmuch as the only indication of its presence in a highly developed residential section is an attractive house 6 x 7 feet in plan and about 7¼ feet high, because of these dimensions frequently referred to as a "dog house"—and it might well house with considerable comfort one great Dane. A standard door permits entry to the house, and then a ladder through a manhole permits access to an underground room 13 x 21 feet and 7 feet high, where pumps, meters, chemical dosing equipment and a heater are so neatly and compactly arranged that there is ample room for several people to move around the remaining space with ease.

A 24-inch cast-iron line from the south reservoir passes by outside the building, but is by-passed through tthe building in a 12-inch line on which is installed a Hersey Detector meter. Thus, with the main line closed, all the water delivered by gravity to the town from the south reservoir, and that which is pumped to the high service from this supply, is measured.

Taking suction from the 12-inch line is a Fairbanks-Morse single-stage, 500-gpm, centrifugal pump driven by a 25-hp F-M motor operating against a head of 70 pounds to the high-pressure service. The static head on the high service at this point is 66 pounds and on the low-pressure service, 14 pounds. If more water is needed quickly in the low-service lines, a valve separating the two services, and normally closed, may be manually opened so that water is delivered through a Ross pressure-reducing valve set to maintain 14 pounds pressure on the low-pressure side at this point.

The 6-inch by-pass meter of the Hersey Detector takes all flows up to 400 gpm, after which the 10-inch main-line meter opens up and has handled flows as high as 2,800 gpm. A good check is maintained on these meters by the installation of a Crosby pressure gage which indicates the loss of head through the meter.

The pumpage to the high service is measured through a Hersey proportional meter. At one corner of the underground pump station, which is installed in ledge, is an automatic sump pump for taking care of leakage, cooling water, etc., originating within the pumping station.

The numerous controls for the pumps are on a main panel and are all automatic. The elevation of water in the high-service tank controls the operation of the pump through a General Electric relay system. So that slight surges in the line will not cause the pump to repeatedly start and stop, there are compressed air tanks installed in the line to act as snubbers. It was impossible to operate these stations under automatic control with an ordinary check-valve, so Chapman balanced check-valves were installed reducing the surge to a minimum when the pumps were stopped. A separate fuse control is installed in the panel for the main pump, the sump pump and other electrical equipment. All the recording clocks within the station are electric-operated. These include a Foxboro recording gage on the high-service pressure and another on the low-service pressure.

A General Electric time clock controls the times at which the high-service pump may operate when there is a demand for water because of the reduction in the pressure in the high-service system. This time clock was used during the winter of 1940-41, to prevent the pump at this station, and another one also working off the same gravity line, from operating at the same time. Similarly, in summer the time clock was used to permit the pumps to operate when there was the least water demand. From November through January the clock was set so that the pumps did not operate during the peak electrical demand of the local power utility. There is also a General Electric recorder on the pump which shows the number of hours the pump was in actual operation.

A small kerosene stove in one corner of the pumping station is used to keep the station dry in excessively humid weather and to heat it in winter. The flue from the stove is run up through a cast-iron pipe in the center of the "dog house" above, and outside of the cast-iron pipe is a vent which permits the ventilation of the surface structure. Thus, the heat from the stovepipe causes a movement of air through the cast-iron pipe and thus aids in ventilating the underground pump room.

## Special Treatment

About eight years ago it was found that the flow in the main cast-iron pipes, which were about 40 years old, had decreased because of the formation of iron tubercles. To overcome this, the mains were cleaned, restoring the carrying capacity. After a short time red water developed in these pipes. To offset this, lime was fed through an Omega dry feeder and Proportioneers pumps. As the water is very soft, 20 ppm of hardness, the lime did not coat the pipes as expected. Silicate of soda was used with no better results. The Water Commissioners are experimenting with Calgon, using the same Proportioneers pumps controlled by the master Detector meter, with success attending the treatment. No red water complaints have been received since using the Calgon. At present the dose is 1.5 ppm, but this is to be reduced very soon. The water is sterilized by applying a solution of Merclor, a hypochlorite solution which is handled by another pair of Proportioneers pumps, hooked up in a manner similar to

the Calgon pumps. The hypochlorite solution is mixed in 50-gallon drums in the pumping station and is applied to give a residual of 0.1 ppm. The actual volume of Calgon solution applied is measured by a ⅜-inch Hersey disc meter.

The same type of station is located at the base of the north reservoir dam, containing master meters and water treatment.

The High Street booster pumping station is only apparent on the surface by a copper-covered hatch at the side of the street quite well concealed by small pine trees. The underground room which extends out beneath the street is 10 x 14 feet in plan and has plenty of headroom. No treatment is applied at this station, since the water is treated when it leaves the reservoir. This station supplies water to the west high service.

There is also another booster station situated on Myopia Road. It is of fieldstone construction and formerly housed a kerosene engine and plunger pump. It is now equipped with a modern electrically driven centrifugal pump.

## Impounded and Well Supplies

The impounded supply of Winchester comprises three reservoirs created by damming suitable impounding areas which had been purchased by the town. These comprise the north, middle and south reservoirs, the surfaces of which are at elevations 150.90, 164.60, and 162.50 respectively, above the Boston City Base. These reservoirs, with their surrounding watershed areas, have been closed to the public for five years. The area owned by the town does not include the entire watershed area, which extends into surrounding property owned by the state for recreational purposes. The watershed area is patrolled continuously. There are no dwellings of any kind or industrial buildings on the watershed. Over 400,000 pine trees have been set out on the strip of land owned for the protection of the reservoirs on 8 miles of shore line. This band of trees extends from 25 to 450 feet back from the shore. Five telephone stations are located within this area, one of them being in a fire tower.

A 16-inch cast iron line is laid beneath the dam forming the north reservoir, and a 24-inch line leads from the south reservoir. These lines lead to opposite ends of the town. Either one can supply the whole town, but the service is usually divided by gates near the center of the system. Water from the middle reservoir, which is higher in elevation than the other two, may be permitted to flow in either direction to supply the other two reservoirs as required. All the water is metered, chlorinated and treated with Calgon.

The 400 acres of land owned by the town along the edge of the reservoir contains a dirt road permitting access to all sections. At one point on the middle reservoir is a well-built log cabin which contains a telephone, a cook stove and toilet facilities for the use of the patrol man. The sanitary system is a chemical toilet, and similar cans are required to be used by all gangs working in the land surrounding the reservoirs.

About three years ago a well field was developed on property which the town purchased at a very reasonable price. A total of 24 wells of 2½-inch pipe were driven to an average depth of 50 feet on the 23 acres acquired. This well field was started before the severe drought of 1939, and showed remarkable forethought on the part of the Water Commissioners, for it was badly needed in 1940. The water from the wells has a hardness of 120 ppm. The citizens, being used to soft water, objected very strenuously to this hard water, and the Water Commissioners are now installing a Permutit zeolite water softener.

The pumping station for the well field has a vacuum tank with high and low switches, the latter starting the Nash Hytor vacuum pump to draw water from the wells. A second low-level switch is arranged to cut out the power of the Fairbanks-Morse 4-inch pump which delivers the well water to the system. Thus, the pump is protected against burning-out in case of lack of water in the vacuum tank. A Sparling main line meter is installed to measure the discharge of the pump and a Simplex automatic control valve is used to limit the flow.

It is readily possible to double the capacity of the present pump house, which measures 13 x 21 feet in plan and has a 7 x 9-foot L for the sand chamber. There is ample space within the existing house for the installation of a duplicate pump.

## "The Floating Island"

A story of the Winchester water supply would not be complete without recounting the tale of the floating island in middle reservoir. This reservoir was created in 1887 and some time later an island measuring about 100 x 35 feet appeared in the middle of the reservoir. In 1931, for no apparent reason whatsoever, a 25 x 40-foot addition showed up over night, lasted about six months and then disappeared as quickly as it had appeared. This addition was from 18 to 30 inches thick and when prodded with an oar considerable gas came through the soil.

In mid-April, 1941, however, a strong northwest wind blew rather steadily for several days, and when the patrol man inspected the reservoir one morning the island had disappeared from its usual location and was finally located resting close to the easterly shore. The island, having been in the middle of the reservoir for so long, had become a sanctuary for wild bird life.

*(Concluded on page 85)*

*Laying a New Transite Water Main in Winchester, Mass.*

# After Defense—What?

## *Cities and Nation Must Join in Up-Building America*

CALLING on public and private agencies to start work now on the problem of transferring millions of men from "all-out production for defense to all-out production for normal living, when this war is over," the National Resources Planning Board issued last month a report on the necessity for immediate national and local attention to post-emergency planning.

In this pamphlet—"After Defense—What?"—the Board expresses the view that "energetic and intelligent teamwork will make it possible for us to move from defense to peace while maintaining full employment" by increasing the national income, developing higher standards of living, and planning "to make Up-Building America the keynote of the post-defense program."

"The real problems of war never arise until after the war is over," says the Board. "When this war is won, we can lose everything we are arming to defend if, in the transition to peace, we slip back to a low national income with its inevitable unemployment, suffering, chaos and loss of freedom. To discover ways and to work out plans for shifting from full employment for defense to full employment for peace is a matter of outstanding concern.

"In this program Government must take a leading part because it is the only representative of us all, the common meeting ground of all interests, and the one center of responsible coordinating power through which we can all act together."

### Magnitude of the Problem

The report includes two tables in which estimates are offered as to the size of the problem we shall face when the war is over. According to Table I:

. If we take the year 1944, arbitrarily, as the end of this war, we find that the defense effort will then be absorbing the energies of about 23 million workers in war industries and about 3½ million in the armed services. Turning from defense to peace will therefore involve transferring from 23 to 26 million men back into peace-time activities. This is a colossal undertaking. It too will require time.

Table II shows that the workers of the United States can produce, *under a system of full employment*, 105 to 110 million dollars worth of goods and services once we are organized for it. In other words, a national income of 105 billion dollars is perfectly possible. When we organize for maximum production on the basis of full employment, without being stopped by the costs, we discover, as have other nations, that increased production pays the real costs involved. Doing the job pays the bill. In other words, the central problem is not money, it is man-power, resources and organization. At last we are beginning to see that finance was made for man, and not man for finance.

A modern nation cannot avoid balancing its total production-consumption budget. This can be done at a low level with a great deal of unemployment, inefficiency, and suffering; or it can be done at a high level, with full employment, high efficiency and a better life for all.

The full employment and prosperity which is coming with the defense effort proves that we can have a full employment system and balance the production consumption budget at a high level if we are determined to have it so, because we do have the necessary man-power, resources, productive plant and organizing ability.

The great problem we face when the war ends is to move over from a system of full employment for defense to a system of full employment for peace, without going through a low-employment slump. . . .

In the meantime if things are left to work themselves out, what happens to the demobilized workers and veterans and their families? Will they be without work? Will they stop producing? Will the national income drop 15 billion dollars or so as soon as pent-up demands are met? Will the succeeding drop in consumption throw others out of work, and reduce national production and income another 10 to 20 billion dollars? If so, we shall be back again in the valley of the depression, and a terrific new strain will be thrown on our whole system of political, social and economic life.

The American people will never stand for this. Sooner or later they will step in and refuse to let matters work themselves out."

### Main Objectives Summarized

The central objectives of post-defense planning are summarized in the statement as follows:

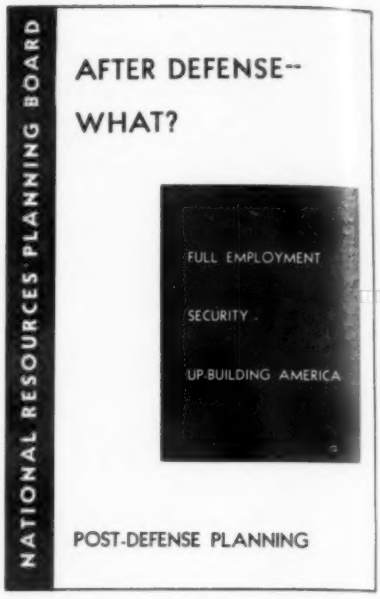
1. We must plan for full employment, for maintaining the national income at 100 billion dollars a year at least, a point we shall reach by 1944, rather than to let it slip back to 80, or 70 or 60 billion dollars again. In other words, we shall plan to balance our national production-consumption budget at a high level with full employment, not at a low level with mass unemployment.

2. We must plan to do this without requiring work from youth who should be in school, the aged who should be relieved if they wish it, and women who choose to make their contribution in the home, and without asking anyone to work regularly in mines, factories, transportation or offices more than 40 hours a week or 50 weeks a year, or to sacrifice the wage standards which have been set.

3. We must plan to decentralize post-defense emergency activities as far as possible; to use to the utmost our system of modified free enterprise with its voluntary employment, its special reward for effort, imagination and improvement, its elasticity and competition; and to advance cooperatively under national and governmental leadership.

4. We must plan to enable every human being within our boundaries to realize progressively the promise of American life in food, shelter, clothing, medical care, education, work, rest, home life, opportunity to advance, adventure, and the basic freedoms.

5. We must plan to make Up-Building America the keynote of the post-defense program, including both construction activities which will add to the national estate and service activities which will end malnutrition, and increase the vitality, health, skill, productivity, knowledge and happiness of the American people, and thus add to our wealth and well-being.




### State and Local Aid Through the "Public Work Reserve"

For state and local governmental programs of public activities, the National Resources Planning Board has conducted demonstration projects for "Capital Budgets" and now serves as joint sponsor with the Federal Works Agency of the "Public Work Reserve." This new organization, set up as a WPA project, is providing technical guidance and assistance to state and local governments for the preparation of six-year programs, similar to the Federal Agency Programs, but based on the state or local finances. As its name implies, here is a "reserve" of projects and activities which can be called into action when needed locally or when called for by national policy. Discussing municipal needs, the pamphlet says:

The Board has long been convinced of the need for large-scale rebuilding of our cities. In the post-defense period the largest opportunities would seem to lie in provision of new housing and rehabilitation of blighted areas, and in the rebuilding of terminal facilities adapted to modern requirements for interchange among rail, highway, waterway, and air carriers, and between terminals and markets. A special effort is being made under the Board's auspices to explore these needs and possibilities.

Though the planning and execution of these large public works and activities are of importance from the standpoint of their contribution to service and to the enhancement of our national estate, the timing and value of these public capital investments is of particular importance as a means of setting forces in motion which will lead private enterprise also to embark confidently on large-scale capital improvements.

Outlining the role to be taken by the Board in post-defense planning, the statement says:

The National Resources Planning Board has been instructed by the President, (November 12, 1940) to collect, analyze and collate all constructive plans for significant public and private action in the post-defense period in so far as these have to do with the natural and human resources of the nation. In the discharge of this responsibility the Board will serve as a clearing-house to gather ideas and plans, to stimulate appropriate independent action by other public and private agencies, to bring together individuals who are interested in harmonizing their views, and to furnish the President and the Congress with information on these matters.

The elected representatives of the people will of course make the decisions on policies and methods for meeting the problems of the post-defense period. The Congress has already provided appropriations for the inauguration of needed studies and for the preparation of post-defense plans by various agencies in the Executive branch. As these plans are matured for public discussion and appraisal, the Congress will determine the ways in which they shall be put into action.

The Board will not attempt to make plans for other agencies within their field of independent responsibility. Rather, it will seek, as in the past, to persuade other agencies to prepare plans. The Board is instructed to gather these programs on behalf of the President. The Board needs and requests help and cooperation of official and unofficial agencies and bodies in assembling the plans for dealing with the needs of the post-defense period as they arise.

# How the Public Work Reserve Will Operate

AT a regional conference held in New York August 18-20, the scope and program of the Public Work Reserve (mentioned in the foregoing article) were presented by its National Director, E. S. Smith, Jr.; its Planning Consultant, Jacob Baker; and by Frank W. Herring, Assistant Director, National Resources Planning Board, and others. Excerpts from Mr. Smith's talk follow:

The Public Work Reserve has been established to prepare an inventory and develop a reservoir of all needed and useful public work, both construction and non-construction, below the level of Federal construction.

The project will operate under the direction of a National Director in Washington, with four regional offices, each in charge of a Field Representative, for general field supervision. Within a state a State Director will have complete charge of the work, and will be directly and entirely responsible to the National Director through the Regional Field Representative.

In establishing the over-all inventory and shelf of projects, it must at all times be emphasized that the manner in which the work listed therein will ultimately be financed or prosecuted, or the degree or kind of Federal participation, *if any*, cannot at this time be known or implied. Projects listed therein are not to be considered as applications to the Federal Government for assistance, nor are they to be considered as statements of work involving any obligation on the part of the local government unit to prosecute or finance at any specific time or to any specific extent.

While WPA funds are to be used in operating the Public Work Reserve, this does not imply any limitation with respect either to the kinds of public work to be included in the reservoir, or to the method ultimately to be used in undertaking the work contemplated. It will include every kind of useful and needed public work. Public work divides itself naturally into two categories. Construction projects will hereafter be referred to as Capital Improvements; non-construction projects will hereafter be referred to as Public Services, which include all those activities in the realm of so-called white-collar work.

The information regarding a desired undertaking of a local government unit will be compiled, in the initial steps, in the form of a prospectus. This prospectus is a simple one-sheet document. As and when prepared, prospectuses will be forwarded to the office of the National Director for recording, classification, and future reference. A copy of each prospectus will be retained by the local government unit which proposed it, and collectively they will serve as a basis for that local government to prepare its long-range programs or schedules for the performance of such work as it may be able to finance.

## Four Phases of Activity of the Program

The complete scope of activity contemplated by the Public Work Reserve may be briefly summed up in the following four phases:

1. A complete listing or inventory of public improvements or facilities which state and local governments feel to be desirable or needed; together with such plans and estimates as are available.

2. Assist local government units, where necessary, in the full development of studies, surveys, designs and plans for each project listed which presents substantial merit. This is to the end that every project on the shelf will ultimately be completely planned and available for immediate operation.

3. Encourage and assist state and local governments in comprehensive planning and the development of definite long-range programs based on the budget limitations of the local government itself.

4. Continuing review and revision of the inventory and shelf of projects, to keep it current at all times.

The Public Work Reserve in assisting state and local governments in the preparation of the inventories and the subsequent planning and programming will at all times emphasize the following principles:

(a) That the function of the Public Work Reserve personnel is merely one of *assisting* the state or local authorities; that the determination of what projects are to be included in the inventory and subject programs, the establishment of priorities relative thereto, and the scope or fields to be covered, all are entirely the responsibility and authority of the local government. The inventory, as well as the subsequent programs, if and when adopted, will be based solely upon local desires and needs.

(b) That it is not the desire or intent of the Public Work Reserve to artificially stimulate or expand public work needs or activities, but rather to (1) assist in the establishment of a well-planned national shelf of potential work, available for use as needs arise, and (2) establishment of a procedure and form of assistance which will encourage the local government to plan an orderly and thoughtful scheduling of such work as it may see fit to finance within its budgetary limitations.

*(Continued on page 89)*

# Kalamazoo's Fountain of the Pioneers

## *An Historical Epoch Is the Theme of the Bronson Park Fountain Recently Built in Kalamazoo's Civic Center*

*By* ALFONSO IANNELLI
**Park Ridge, Ill.**

FALL of 1936—noon of a busy day. Edward C. Rutz (then Kalamazoo's City Manager) looks from his office window onto the park. He notices the first Bronson Park Fountain—an insignificant shell for lighting and water equipment. Really, something must be done about it. Criticisms increase from a public that is concerned with matters of civic grace and beauty as well as sanitation, etc. What could be done to make it more significant? he wonders.

So—into action, taking the matter up with the Kalamazoo Business and Professional Women's Club. Within a few days a suggestion is offered that a competition be held for a new fountain design. The suggestion becomes a reality. Sponsored by the Club and other civic-minded women with vision of the city beautiful, the competition is held.

Marcelline Gougler, pupil of Alfonso Iannelli, wins the first prize. Called to Kalamazoo to confer with the fountain committee, she explains that her drawings were prepared under Mr. Iannelli's guidance. The committee sends for Mr. Iannelli to discuss the matter.

First approach: remodel the existing fountain to make it more comely. Historical documents sent by Miss Siedschlag, head of the Art Department of Western State Teachers College, and an interested worker in civic ventures in Kalamazoo, serve as background for the preparation of the idea. Weeks of study — drawings — models — two schemes develop; one is approved.

Discussion ensues as to whether the proposed scheme is the best one. *E. S. Clark* (Mr. Rutz's successor as City Manager) pops this question: "Mr. I., is this the best solution for the problem of our park?"

*Mr. I:* "For the money you want to spend."

*Mr. C:* "Well, we should not jeopardize the permanent development of our city on the saving of a few dollars. What will it cost?"

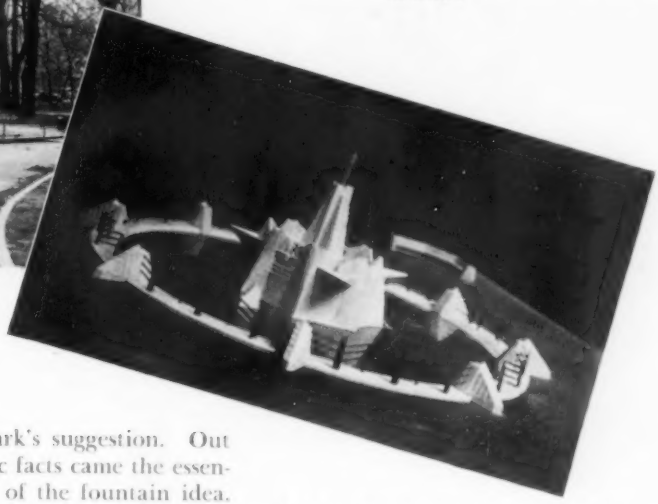
*Mr. I:* "Well, let us see what can be done."

I had recently visited Frank Lloyd Wright and had gotten his criticism. I was dissatisfied. I wanted to see suggested the progression of the growth of Kalamazoo; the efforts of the pioneers; the romantic sadness of the vanquished Indians; the onward strides of the industrial accomplishments; the prolific richness of the country they were blessed with. So, I suggested that the central symbolic tower be moved to the front end instead of the center. Discussion—questions —dissensions. To the rescue came

*General View of Bronson Park, Kalamazoo; Two Pools, 115 Feet Long and 40 Feet Wide; Fountain at East Pool*

*Left—Original Bronson Park Fountain Before Remodeling*

*Below—First Plan of Remodeling Over the Old Structure*



*B. L. Gilbert,* Superintendent of Parks:

"How would it be to lengthen the pool in front—it will balance the tower." "Good idea!" So the new plan was born.

*Mr. Clark:* "How much will it cost?"

After much discussion, a vote of confidence was given to the city committee and Mr. Iannelli to go ahead.

Out of the practical paths on which humans walk through the park came the plan of the new layout—Mr. Clark's suggestion. Out of the historic facts came the essential elements of the fountain idea. Out of review of the reasonable materials came the decision to use a special mixture of a local stone aggregate in concrete. Mechanical equipment was mainly there. Men were available—the order was to put unskilled men to work—the U. S. Government would help through the WPA.

The old fountain was removed from the center of the park, and two pools spaced longitudinally with the new fountain were placed at the east end of the east pool;

*Night View of the Fountain of the Pioneers in Kalamazoo*

*Side View of Fountain of the Pioneers, Looking Toward City Hall*

the tower facing westward, as the pioneers faced. The mass of the fountain becomes essentially a container for hydraulic and electrical equipment. The upper part, a perforated screen to shield the light fixtures and water-spouts, is patterned to symbolize the rich vegetation of the land. The tower symbolizes the pioneers' advance against the Indians' stalwart and fateful resistance. Play of water augments the significance of the forms by use of cascades within the main mass and by cantilevered slabs projecting from it, over which the water falls. Water guns at the sides and ends of the pools greet and follow the general direction. The whole was kept as low as possible considering the visibility. The scale of details is in harmony with the civic structures surrounding the park, and the visual intention was to convey a recurring appearance out of the water of the structural vision of the Kalamazoo Epic Movement of the Pioneers.

Walks wide enough to accommodate benches are laid beside the pools, making of the center an amphitheater effect with the fountain in view from the seats. Traffic walks are kept clear and free of seats. At the the end of one pool is a drinking fountain, and a lone spout in the western pool recalls the play of water at the other end. In the center of the fountain mass connecting with the tower is contemplated a glass-and-metal screen which will symbolize the industrial progress. This will some day be added to complete the construction of the fountain.

Many thanks to the men and women who helped to make the realization of this project.

# City Employees Organize Forum

SCHENECTADY, N. Y.—Officials and employees in the City Hall have organized the Schenectady Municipal Forum to promote "more efficient administration and service to the public, and a better understanding among employees of city departments by acquainting them with the activities and problems encountered by the various departments," and "to create a better relationship among employees through periodic social functions." Both men and women belong to the Forum, and it is expected that before the year is over practically every employee and official in City Hall will be a member of the organization.

Organized early this year, the Forum has already had two dinner meetings, and a third meeting at which a talk was given by a prominent attorney interested in municipal government, and entertainment was provided by a monologist. Interest has been indicated by full attendance at all meetings. The next event scheduled was a picnic to which members brought their husbands, wives or friends as guests.

With the advent of cooler weather in the fall, indoor meetings will again be held, at which city officials and department and bureau heads will be invited to speak. It is planned to have two boxes at these meetings in which questions and suggestions for improvements of the public service can be dropped. Open discussions will follow all talks, thus increasing interest.

Officers of the Forum are scattered through the various departments and bureaus as follows: President, the Finance Director; First Vice-President, Walter H. Mischler, of the Bureau of Water; Second Vice-President, Robert W. Christie, of the Bureau of Traffic and City Planning; Third Vice-President, Arthur Blessing, Designing Engineer, in the Department of Engineering and Public Works; Fourth Vice-President, Freeman K. Keller, Deputy City Clerk; Secretary, Miss Helen E. Woods, of the Finance Department; and Treasurer, Myles J. Burke, Budget and Personnel Officer.

H. A. ROOT,
Director of Finance.

# The Architectural School as an Aid to Local Government

## *The Architect May Do More for the Community Than Plan Its Buildings*

*By* A. C. Schweizer, A.I.A.

**Director of the School of Architecture and Allied Arts, New York University**

TECHNICAL development is as important in modern municipal government as it is in modern organizations for war. There is no department of city government which has not been made more effective by the technician's skill. Crime control, fire fighting, sanitation, and all other phases have advanced far with modern ways. Not only have governmental activities expanded; they have taken on new efficiency with widespread replacement of politics by science.

One of the leading roles in this new drama of modern government is played by architecture. In fact, architecture plays a number of important parts. It concerns itself with more than providing shelter for the many specialized activities of government. A logical structure is determined by the functions it houses, but it in turn helps or handicaps these functions. Architecture is not just a matter of walls, ceilings, doors, and windows. It embraces also the proper equipment to make the structure work. It enlists the services of specialists in ventilating, electric wiring, soundproofing, and a dozen other aspects. Planning and coordinating all these items is the function of the architect.

### Special Training Needed

The architect may do more for the local government than plan its buildings. He plays a major part in bringing bridges, docks, and sewage-treatment plants into being. He should be indispensable in the planning of playgrounds, parks, or parkways. He should also be an important factor in planning the community in its broadest sense: in the solving of zoning and traffic problems. He is obviously essential in slum clearance and social housing.

All these vital elements of municipal government demand a particular type of architecture, for which a special form of training is needed. Hitherto the architectural school and the municipality have been too much strangers. They could benefit by being more neighborly. Certainly local governments have a stake in training young men and women to work more effectively on their particular problems. Cooperation on educational policy can prevent gaps in training and give more practical value to teaching as far as municipal affairs are concerned. This is true whether the talent is to be employed on the basis of professional retainer or just as "hired help" in one of the increasing number of municipal drafting offices.

### How Students Can Help

The municipality can also use the architectural school to help meet specific needs. A community always has architectural problems in the fields of housing, governmental services, and recreation which are insufficiently concrete and immediate to be provided for in normal budgets. The preliminary steps in investigating such matters may well be taken in schools. The fresh, enthusiastic approach of the student, if properly guided, may be extremely effective. Students in architectural schools already produce and study schemes ranging from the replanning of a city water front to a system of air-raid protection. Such work can be given final form and application in architectural offices or in the various municipal departments.

Besides actual work in planning or designing, there are other municipal activities which may properly be carried on in the architectural school. Survey work is one of these. Students can be used to gather data on social conditions for housing, to investigate building trends for zoning and building regulation amendments, or to carry on town planning surveys.

Research into modern methods and materials of construction, as applicable to the uses of the municipality, is another field. This can be extended to include the actual testing of materials. The scope of testing would depend on laboratory facilities for the work, which, incidentally, the municipality might help to provide to its own advantage.

The present time is a particularly good one for municipalities to take steps in enlisting the cooperation of architectural schools. The defense program is putting additional burdens on local governments and at the same time hiring away the technical men necessary to bear these burdens and, at the same time, carry on normal activity. Municipalities must depend directly or indirectly on architectural schools for replenishing the supply of technically trained employees. The present is a crucial period for schools. A number need help in various ways. It would be to the selfish (if not to the altruistic) interest of the municipal governments to provide assistance as suggested.

The possibilities of cooperation with schools have been amply demonstrated in the different aspects of engineering. It is time now to learn how to use architectural schools in the building of better planned and constructed modern communities.

# New York's Marine Amphitheatre

NEW YORK CITY has another large and attractive new swimming pool, its seventeenth, located in Flushing Meadow Amphitheatre, better remembered as the Billy Rose Aquacade of the New York World's Fair.

The Amphitheatre was built by the state, in accordance with an agreement with the city of New York, as a permanent structure for use in the new park. It is semi-circular and seats 8,300 people, facing a revolving stage on the farther side of what is now the new swimming pool.

The Billy Rose pool of steel, with filters and sterilizing equipment for handling the needs of the performers, has been replaced by a pile-carried reinforced-concrete pool with an unusually thorough purification system turning over the water at the rate of 1,200 gallons per minute, 72,000 gallons per hour, and in eight hours the 575,000 gallons capacity of the new pool.

The recirculation of the water is accomplished by three motor-driven centrifugal pumps of 400 gpm capacity each, built by the Economy Pump Co. The water is injected through inlets spaced 20 feet apart all around the perimeter of the pool, and returns to the filters from the deep ends of the pool. Westinghouse underwater lights of the front lamping type are installed. The lamps are of the wet-niche type, and there is no tunnel for servicing them, since the construction of a tunnel would have reduced the size of the pool. A Number 1 requirement of Park Commissioner Robert Moses is that at every New York City swimming pool all the area possible must be devoted to swimming and bathing.

Sterilization is by two Wallace & Tiernan dry chemical feeders for feeding alum just ahead of the filters, and two duplex multi-control solution feeders made by Proportioneers, Inc., for sterilization by the chloramine treatment.

The water is filtered by 16 pressure filters manufactured by Graver Tank & Mfg. Co., Inc. At a pool of this size, usual practice would be to install four large filters. The engineers here, however, were confronted by a fact accomplished. The structure to be used was already in existence, and the foundations would not carry the concentrated load of large filters. Consequently, the filtering job was split up among sixteen filters arranged in batteries of four. Even using these smaller filters, it was necessary to distribute their weight between columns by means of auxiliary beams. The filters are 5½ feet in diameter and use Anthrafilt for more rapid flow.

An important feature of the filters is that each is washed or backwashed to clean it of accumulated sediment, by water from the other filters of its bank. No raw water from the city mains is used in washing the filters, so that only the chlorinated filtered water returns to the pool. The washing job requires no skill and is quickly performed.

The swimming pool is 197 feet long by 70 feet wide at its widest. The center portion, 100 feet long by 70 feet wide and 4 feet deep, is the swimming area. Double lines of floats separate this area from the two end sections, where the water is 11 feet deep for diving.

At each end is a diving tower, one 32 feet 5 inches high and the other 25 feet 10 inches high, equipped with diving boards at elevations of 1 and 3 meters and platforms at 5 and 10 meters. The towers also

carry the floodlights and the public-address system. This sound system uses Western Electric wide-range loudspeakers and the already existing RCA amplifiers. The system is designed to meet the requirements of both pool and stage. Although there is sound equipment on each tower, the two systems may be operated individually. The feature of the speakers is that their sound output is controlled so that each speaker produces the correct volume required by the area it serves.

The mechanical operating equipment of the pool is installed in the center section under the amphitheatre. On either side are the lockers, showers and toilets for 1,458 men and 1,278 women. The basket system is used, the men being provided with benches and the women with cubicles for dressing. To reach the pool it is necessary to walk through the showers. The water is heated by gas. Cleaning equipment, including diving helmets, was furnished by the Morse Diving Equipment Company, Inc.

Aymar Embury is architect and the consulting mechanical engineers are E. A. Sears and A. P. Kopf, who state their problem as follows:

1. To provide maximum water facilities for the public.

2. To make the pool suitable for water pageants and meets.

3. To provide for stage productions.

The pool opened July 26. On weekdays and Saturdays it is free to children under 14 years of age from 10 A.M. to 12:30 P.M. No adults are admitted during this period. After 1 P.M. and on Sundays and holidays, children under 14 are charged 10 cents and all others 20 cents. August 22d and 23d will witness here the finals in the Second Annual Sports Tournament Championship Swimming Meet.

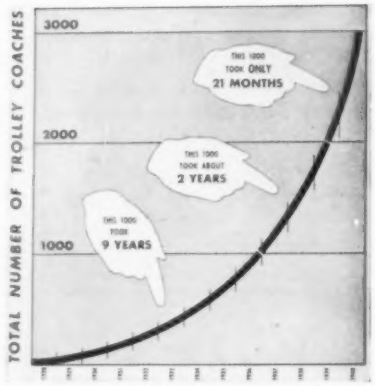
Every Wednesday there is a show composed of aquatic, stage and musical productions, starting at 8:30 P.M. Admission to the Ampitheatre for these shows is 20 cents and P.M. Admission to the Amphitheatre 35 cents. The first of these shows attracted 5,000 spectators; the second show, a few less; and at the third show the attendance was 5,911 and the revenue above $1,400. The season closed on September 7, 1941.

*Night View of Pool and, Above, the Sound-Control Room Which Operates the Entire Public Address System in the Pool Area*

# More People Like Electric Transit

MORE than 3,000 trolley coaches are now operating in 70 cities ranging upward from Greenville, S. C., where there are 18, and Greensboro, N.C., where there are 12, to Providence, R. I. (119), Kansas City, Mo., and Chicago (152 each), Portland, Ore. (141), Milwaukee (179), Seattle (235), and Public Service Coordinated Transport, N. J. (583 all-service vehicles), these 7 cities being served by 1,561 of these vehicles which, according to Staff Engineer E. J. McIlraith of the Chicago Surface Line, show "superior performance over any type of local transportation vehicle other than street cars." The superiority is in "starting, stopping, heating, lighting, ventilation, and comfort for passengers." Says General Manager A. R. Williams, United Electric Railways, Providence, R. I.: "Since we first went to trackless trolleys, they have given us proper maintenance of schedules, fast and comfortable equipment, operations over an unencumbered highway with a mobile transportation unit. In addition to providing us with these operating advantages, the trackless trolley has met with unanimous approval. In the last nine years we have replaced 13 rail lines with trackless trolleys, and in every case they have produced increased patronage and revenue."

"Before trolley coaches were decided upon for Wilkes-Barre," said Mayor Charles N. Loveland of that city, "I made a personal visit to Providence to see them in action. I was much impressed by their speed and comfort, and their negotiability in heavy traffic. We are more than pleased with their results here. I believe that the use of trolley coaches on some of our narrow streets in the business district can speed up traffic 20 per cent."




*How Trolley Coaches Increased in Numbers from 1928 to 1940*

## Street Cars

Though the trolley coach is usually considered best adapted to traffic of medium density, it is built for capacities ranging from 30 passengers to 64 passengers. The 40-passenger coach is the most popular size. The supercoach is in the offing, awaiting interstate sanction to give the street car a run for the money.

Labor conditions being what they are, the need for a large, speedy, flexible vehicle is being stressed. The Baltimore Transit Co. has placed its fifth order for modern street cars, bringing its fleet to 177 P. C. C. cars. The St. Louis Public Service Co. has added 100 P. C. C. cars to the 100 which made a hit in 1940. Kansas City is the 16th city to operate these modern street cars, 24 having recently been ordered.

Most large urban centers still have street-car lines and, for reasons of economy, require vehicles of street-car size to handle the heavy traffic. The Special Committee on Sizes and Weights of Motor Vehicles of the American Transit Association points out that a line maintaining headways of three to four minutes, carrying as many as 120 passengers in each car, cannot be economically replaced, at present fare levels, by 40-passenger vehicles carrying a maximum of 70 passengers. Yet present laws in most states do not permit the use of the new type of trackless semi-trailer vehicle known as the supercoach.

The semi-trailer portion of this

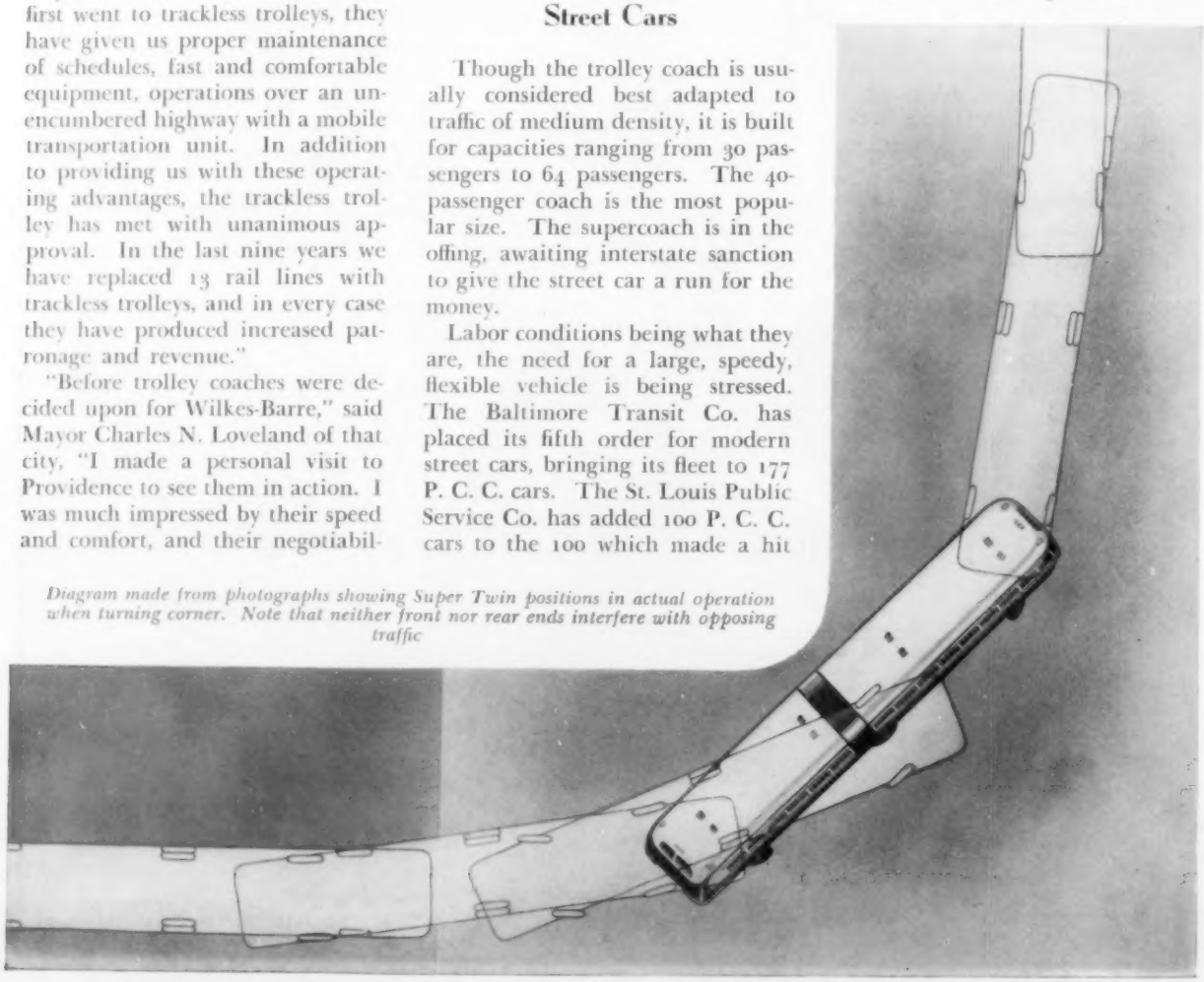


*Diagram made from photographs showing Super Twin positions in actual operation when turning corner. Note that neither front nor rear ends interfere with opposing traffic*

vehicle is carried on a standard axle equipped with steering knuckles identical with those used on the front axle. This steering mechanism is so interconnected with the steering gear of the front axle that when the vehicle turns, the back end follows exactly in the same course as does the front end. In so doing it operates very much as a hook-and-ladder fire truck.

The unladen weight of this new 58-passenger, car-sized coach, developed by the Twin Coach Co., Kent, Ohio, is 22,000 pounds, length 47 feet. Operating either as a trolley coach or as a diesel-electric bus, it is built to attract patronage, accommodate crowds, and maneuver safely. In many cities it can be used with mere changes in the local police regulations; elsewhere, a revision in the state law or the permission of the state public service commission may be necessary. It is an important element of the evolving art of the transit industry, in designing modern vehicles to handle crowds with minimum street obstruction.

*This 40-passenger Pullman trolley coach is one of 93 trolley coaches serving Dayton, Ohio*

# Critical Point in Civilization— A Problem in Construction Finance

To the Editor of THE AMERICAN CITY:

When a civilization passes the point where it is no longer immediately necessary to keep producing buildings, roads, public works and other forms of capital goods, that civilization has reached its critical period. If there are enough makeshifts that can be put to use, it seems foolhardy to employ the high-paid workers in the construction industry merely for the sake of having new buildings and new facilities, when those facilities which are already existing can be made to do well enough without the need for additional capital outlay.

This paradox has marked the critical point in all previous civilizations.

Civilization is founded upon the willingness of men to trust one another and to delegate one to another the performance of specialized tasks. By this means, at first a few men may be released from the primary task of getting their own food and set to the task of creating those things which protect other men against the elements, then ultimately additional men may be released to create those things which make life richer and fuller.

The advance of civilization depends upon the ability of men to exchange among one another the benefits which they have created and to measure equitably the values which they exchange. Civilization reaches a critical point when exchange becomes so complex that the very complexity of the exchange mechanism prevents men from performing tasks which they are trained to perform and free to perform. Unemployment is a visible danger signal.

Money and credit are the devices which civilization employs to measure exchange. These two are intermingled and neither is well understood by the average man. The capital goods industries, although now engaged in a war boom, have languished for the past ten years because of derangement and lack of understanding of that particular part of our exchange system which has to do with the production and use of buildings and other forms of durable equipment. City officials recognize that city growth must continue. City officials also recognize that healthy city growth cannot continue unless the full productive capacity of urban population can be utilized and the products exchanged on an equitable basis.

The problem isn't solved by putting unemployed persons on a relief pay roll and charging the cost through taxes to those who can be made to pay. The task is to direct employment into channels which will create values that will pay back, through the earnings of capital goods, the amounts invested in the production of capital facilities.

To maintain a healthy economic condition, money must be kept in motion. The outward flow measures the value of the productive work. The return flow measures the value of the consumption services. The function of banking with respect to construction is to provide credit during the interval between production and consumption. This credit must be paid off during the useful life of the building.

Amortization must be recognized as a charge against economic rent. It has been the failure of the building industry to develop a philosophical understanding of amortization that has made it the prey of the manipulator and the starting point of economic dislocations.

ARTHUR C. HOLDEN.

EDITORIAL NOTE: The views expressed above by Mr. Holden, one of New York's leading architects and Vice-President of the New York Building Congress, are more fully developed in his recent book, "Money in Motion—The Social Function of Banking" (New York: Harper & Brothers. 242 pp. 2.50).

# Major Thoroughfare Widened and Reflecting Curbs Used

## *A 7,600-Foot Project on South Main Street, Houston, Completed Under Traffic by Local Contractor*

THE problem of providing adequate street and highway facilities for the rapidly expanding commercial and residential areas within and surrounding Houston, Texas, is taxing the planning and financial resources of both the city and the state. The recent completion of the widening of the paved traffic areas of South Main Street, by the city, provides an excellent example of ingenuity and careful planning.

South Main Street leads from the center of Houston toward the southwest, carrying heavy local traffic and through traffic on U. S. 90, the Old Spanish Trail, going to or coming from San Antonio and El Paso. The section included in this project runs between Hermann Park on one side, and the grounds of Rice Institute on the other. The park, of several acres, contains numerous playgrounds, a zoo and the municipal golf course. In this section South Main Street consisted of two 22½-foot roadways with a 20-foot esplanade in the center with flowerbeds all on a 120-foot right-of-way. The old concrete base and the asphalt surface were badly in need of replacement when the work was undertaken. The construction was done as a straight city project, by contract, and paid for by assessment. Under the assessment method in Houston the city pays for all intersections and 10 per cent of all other costs with the exception of the curbs. All curbing is installed at the expense of the abutting property.

### New Design

Taking advantage of the 20-foot esplanade as a means of securing additional traffic lanes, this area was reduced to 4 feet, including the curbs, thus gaining 16 feet for roadways. In addition, the over-all width was increased to 71 feet by taking a slice from the park strips at the outside of the road. This made it necessary to move the street lights back, and advantage was taken of this to install a new type with brackets of simple design which would place the lights clear of the foliage of the trees. It is interesting to note that in spite of the fact that there are trees along both park areas, at the sides of South Main Street, it was not necessary to move or to destroy a single tree in this 7,600-foot widening project.

### Construction

Because of the importance of this thoroughfare, it was necessary to maintain traffic on one-half of the road at all times. This was done by careful planning of excavation, pouring of base and placing of asphalt surface. All curbs, the esplanade and the area between the old and the new curb lines, were excavated to an average depth of 18 inches at the curb to remove the old broken base and to insure a stable foundation for the new base and roadway surface. The excavation included slight changes in grade to do away with the breaks in grade at short intervals so that under the new design the grade is carried unbroken as far as 1,000 feet, but the catch-basins are placed an average of 250 feet apart.

The concrete base, 33½ feet wide on either side of the medial strip, was divided into two 16-foot 9-inch slabs for convenience in pouring. These are 6 inches thick at the cen-

*General View of the Improvement of South Main Street, Houston, Texas*

*Type of Curb Inlet and Catch-Basin Used*

ter, crowned 7½ inches between curbs and thickened 3 inches at the edges, being tapered to the uniform thickness of 6 inches at 4 feet from the edges. The base is reinforced with 5 pounds per square yard of steel rods. There are no expansion joints in the base, but expansion joints are placed in the curbs at either side of each catch-basin, and at the beginning and end of all curb returns at intersecting streets.

The base is of graded washed shell which has not been crushed. The batch is made up of one-half washed shell and one-half sand by weight with five bags of cement per cubic yard, and mixed one full minute. The two 16-foot 9-inch strips of the base are doweled by using the regular reinforcing steel extended 40 diameters, or 20 inches for the ½-inch rods, into the adjacent slab. The base was finished by hand bull floating and then straight-edged.

The 2-inch asphaltic concrete surface consists of a 1½-inch bottom course, containing maximum 1-inch gravel aggregate with 4 to 7 per cent asphalt, and a surface course ½-inch thick with ⅜-inch maximum aggregate and from 4 to 6 per cent asphalt by weight. Both courses were first rolled with 3-wheel 10-ton rollers for breakdown and finished by diagonal rolling with 8-ton tandem rollers.

## Curb and Gutter Construction

The outside curb and gutter were poured monolithically with the concrete base, while the reflecting curb at the medial strip was precast and placed later. The outer curb is 15¾ inches high, with 7 inches exposed above the pavement surface on the face. It is 5½ inches wide at the top, with a 3-inch radius from the top to the face, the latter being battered ½-inch in the 7 inches exposed. These curbs are reinforced. The gutter section is 8 inches thick and runs for 18½ inches from the face of the curb. The name of the street and the block number are inserted in the face of all new concrete curbing set in Houston. A white background with blue tile for the name and number gives a satisfactory contrast.

*A Section of the Concrete Reflecting Curb*

*The New Lighting Installation for the Widened Thoroughfare*

The medial strip curb of the reflecting type is precast in 6-foot sections, using Atlas white cement. One and a ½-inch holes are cast vertically in the curb 1 foot from each end and at the center. To coincide with these holes, ⅝-inch bars are cast in the base at the proper intervals and the precast reflecting curb set on a mortar bed. The holes are then filled with grout and the top suitably tapped and hand finished.

With the sun at the proper angle, these curbs stand out with remarkable distinctness as alternate dark and light rectangles in the curb face. At night, however, the reflection has not proved quite as successful from automobile headlights because of the presence of street lights which greatly reduce the contrast.

Within the medial strip, selected top-soil has been placed and seeded, and a sprinkler system installed so that a luxurious strip of green grass, 4 feet wide, sets off the center strip.

## Personnel

The contract for the widening of South Main Street was awarded to Gaylord Construction Co., Houston, Texas, for the bid price of $156,000. Work on excavation was started August 24, 1940, and the project was completed October 15, 1940, with a minimum of delay to traffic and no stoppage of traffic or detours required. The complete plans for the project were drawn up under the direction of J. M. Nagle, formerly City Engineer, and John G. Turney, then First Assistant City Engineer and now Acting Director of Public Works, by W. G. Cottingham and Travis Smith, the latter being Engineer on the project during construction, with Frank E. Lee as Chief Paving Inspector. It is interesting to note that the city of Houston built about $1,000,000 worth of paving in six months in 1940, as direct city projects, designed, constructed and financed locally.

*Blue tile set in a white background gives the street name and block number*

# Airport Protection by Zoning and Neighborhood Planning

By Joshua H. Vogel
Consultant, Washington State Planning Council, Seattle, Wash.

## *Important Considerations for Safety of Airplane Operation and to Insure Constitutionality*

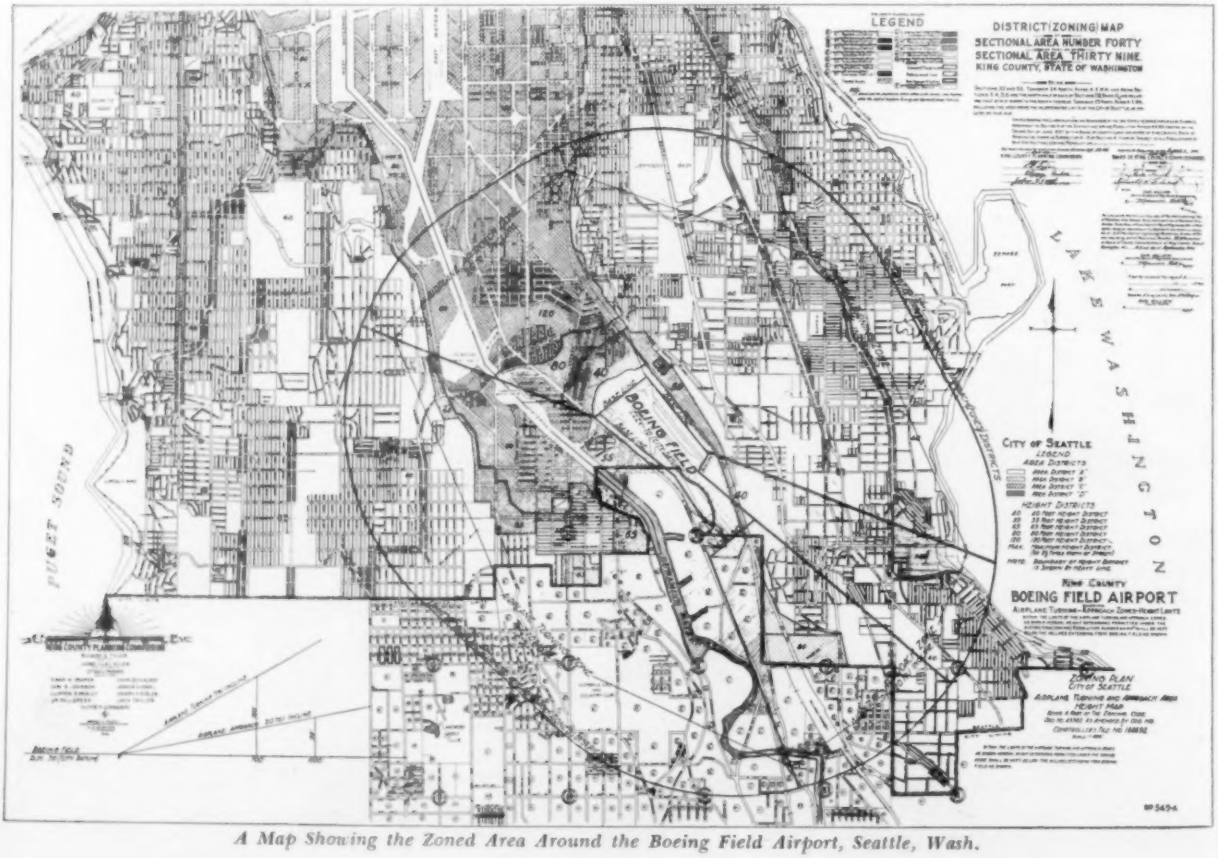
REGULATIONS by ordinance for controlling building and structure height in areas around airports have been conceived and passed in various ways. In the case of Whatcom County, Washington, the following paragraph covers the property adjacent to aerial landing fields and airports.

**SECTION 10. LF—Property Adjacent to Aerial Landing Fields and Airports**

1. In the various use districts no structure over 25 feet in height shall be constructed within 3,000 feet of the nearest boundary of a licensed or lawfully established aerial landing field in such a manner that a line drawn from any point thereon and sloping downward at a rate of 1 foot vertical to 20 feet horizontal will fall inside any boundary of such aerial landing field; nor shall any building be permitted in locations directly opposite the ends of the 5,000-foot graded runway strips shown on the master plan for the Whatcom County Airport, dated November, 1938, a copy of which is filed herewith and made a part hereof by reference, of such a height that a line from any point thereon at the 20 to 1 slope above referred to shall fall within the limits of such graded runway.

This is similar to an ordinance passed by Baltimore, Md., covering airport and aviation protection by limiting building heights, namely, 1 foot of elevation for each 15 feet of distance from the airport boundary. The regulation dealt with the single functional use or purpose, namely aviation, and with one only of the police power purposes, namely safety.

When this Baltimore law was tried out in court, the ordinance was held unconstitutional. The report of this case caused the King County Planning Commission to search immediately for a better method or a different approach which would stand up in court. After considerable correspondence with various attorneys and others, the method of approach was approved by Alfred Bettman, of Cincinnati, and Hugh R. Pomeroy, of the Virginia State Planning Board. At the time we received the Baltimore decision we had an ordinance partially prepared setting up landing field districts. We elaborated on the idea of such districts, making




*A Map Showing the Zoned Area Around the Boeing Field Airport, Seattle, Wash.*

them a distinct part of the usual land-use zoning regulations, together with maps.

## Divided Jurisdiction

Boeing Field Airport lies partly in the city of Seattle and partly in King County. The area northwest of the airport is in the city, and the area southeast is partly city and partly county. The city of Seattle has had a zoning ordinance for some time, covering *use* districts, such as residence, business, and industrial; and *area* districts; that is, the permitted lot coverage. Also shown on the map are the various *height* districts—40-foot, 65-foot, 80-foot and height limit areas.

In the case of the county zoning regulations, there are various districts, or zones—such as residence, business, manufacturing—all shown on the maps; and the zoning regulations themselves give the allowed heights of structures in these zones. In both the city regulations and the county regulations, certain structures like smokestacks, radio towers, etc., by permit, were allowed to exceed the usual height limits.

For effective protection of the airport, the Seattle zoning ordinance and the King County regulations, covering the area surrounding Boeing Field, were made uniform. As will be seen, the map as here reproduced carries the imprint both of the city of Seatle and of King County, the signature of legislative officials.

The regulations of the ordinance must be read in connection with the map, which shows, in the case of the city, the permitted usual height limits, and in the case of the county, the landing field districts. Also, the map shows the base lines from which to compute the 7 to 1 incline and the 20 to 1 incline, which are the inclines which limit the height of the exceptional structures, such as smokestacks, etc. The notes on the drawing are part of the regulations.

The usual height limits in the region of the airport, under both the city and county regulations, are below the inclines extending from the base lines. Both the city and county felt, however, that an airport should own, as part of the airport, land on which perhaps not even a dog house would be allowed, because land within 100 feet of the base line under the 20 to 1 ruling could have no structure more than 5 feet high. If any such land continues to be privately owned farm land, the farmer should give an easement, waiving his rights to build. This is similar to the easements bought by power companies on lands lying beneath their transmission lines, upon which land no structures can be built.

The 35-foot height limit means that land thus occupied must be 700 feet away from the base line at the end of the runways, or 245 feet from the base line at the side of the runways of the Airplane Turning Zones. Beyond such areas the height limits do not affect the usual structures, but do limit the exceptional structures in the same way that we might limit, in a comprehensive plan, location of transmission lines with their high towers or of radio broadcasting towers.

## Neighborhood Problems

Two practical aviation problems face most cities and counties: to protect existing airports which may not always be ideally located; and to locate our new landing fields where more ideal conditions can be had, such as keeping heights of structures within the 43 to 1 ratio to allow for instrument landing.

An excellent example of this latter type of airport is the field that Snohomish County has located and is completing, now an Army air base called Paine Field. The location, midway between the cities of Everett and Seattle, is on a plateau, the highest land in an area several miles wide. The land falls away on all sides of the airport, so that the 43 to 1 slope does not confiscate the use of any man's property, the whole field being located and planned in relationship to the highways between the two cities and yet off from these highways.

Lands around airports should be protected from the smoke of industrial plants, which induces fogs. Also, the nearby industrial district should not be so large that industrial workers would hamper the traffic to and around an airport. In the case of airplane manufacturing, however, ready access should be provided to the airport without obstructions of intervening highways. So it is very essential that, in the same way that we locate industrial plants in relationship to the city or county as a whole, we should locate landing fields, and vice versa. We have to consider what we plan around the manufacturing plant, and we have to consider the land use around a landing field.

In the case of Boeing Field Airport, King County, our prevailing winds necessitated a peculiar layout of the airport runways, which made a difficult problem to work out. We finally arrived at the proper location of the base lines so that the recommended height limits could be carried out.

Each airport is a study in itself with the objectives of land use kept in mind, as well as the objectives of required safety regulations for the landing field itself.

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# On Keeping Emotional Stability and Sanity

PROBABLY the most difficult and the most needed job that we have to do in all this talk and preparation for defense is defense of the spirit and morale of our children and our homes—an everlasting alertness to leave nothing undone that will contribute to emotional stability and sanity.

Good nutrition, sound health, decent housing, sanitation and hygiene are an essential foundation. But ask any psychiatrist, any juvenile or domestic relations court judge, and he will tell you that spirit, morale, emotional stability are best built by recreation—by wholesome fun.

Those of us in and interested in the recreation movement have known this for decades. It was demonstrated in the last war. Today, the Army, the Navy, the Federal Security Agency, recognize the vital relationship between morale and recreation. Of course, it should be remembered that morale building is a by-product to the main objective of recreation—the adding of tang and zest, of richness and color to life through sheer, unalloyed fun. In short, through recreation.

The heart that holds laughter, the eye and the ear that can discern, and the hand that can create beauty, fortify an unconquerable soul. That's morale. Isn't it? There's the first challenge to the National Recreation Association and to every one of us, professional and lay, behind the recreation movement. Isn't this true?

And in the doing, one of the rich things we should get out of this preparation for defense is a new, real democracy of spirit, a fresh sense of the intrinsic worthwhileness of each individual, and a sense of interdependence and cooperation for a unified approach to this whole job.

JOHN W. FAUST.

—From *Recreation* for August, 1941.

# New Steel Filtration Plant Operating at New Britain, Conn.

## *Diesel-Electric Pumping Station Delivers Water to Hilltop Plant Which Can Be Expanded When Needed*

A YEAR ago, on August 15, 1940, the new pumping station for the New Britain, Conn., water supply began delivering Shuttle Meadow water to the new Morse circular steel filtration plant 100 feet above. Thus the old gravity supply from Shuttle Meadow came to an end, but the old 24-inch cast iron line from reservoir to city continues to serve the community. Two valves were inserted in the line, and reservoir water was delivered to the pump station at one side and filtered water to the other side, flowing by gravity to the city under greater pressure.

### Sources of Supply

Shuttle Meadow is the main storage reservoir for New Britain, having a capacity of approximately 1.25 billion gallons. Walcott reservoir flows into the upper end of Shuttle Meadow reservoir and adds 170 million gallons storage capacity. Water from these two reservoirs is pumped to the plant, as mentioned above. Water from Whigville reservoir, which has a capacity of 65 million gallons, flows by gravity to the plant.

As a means of increasing the volume of water available, the wash water from the filters is conserved by allowing it to flow to two settling basins. Water from the first basin is decanted and flows to the East Canal and thence back by gravity to Shuttle Meadow reservoir. The second basin is used for flushing the sludge from the first basin and allowing it to dry, after the material is shoveled out and disposed of on a dump.

The East Canal is 12,000 feet long, and was built to intercept water falling on the other side of the drainage area which normally would have flowed away from the reservoir. In this manner, the drainage area is automatically enlarged as the water flows by gravity to Shuttle Meadow reservoir. A similar canal on the west side, 9,000 feet long, and also built a number of years ago, intercepts water and enlarges the drainage area on that side.

### Pumping Station

The line connecting the new pumping station with the old 24-inch cast iron line is a 30-inch cast iron pipe, and a 30-inch cast iron pipe also connects the pumping station with the plant, and the plant is then reconnected to deliver filtered water to the old 24-inch line by another 30-inch line. This old 24-inch line is now duplicated with a new one the same size, which connects to the distribution system in another section of the city to improve circulation and pressure. Special high service is furnished to the northwest section of the city by a 1-mgd Fairbanks-Morse electric-driven pump with a Chrysler gas engine on the other end of the same shaft for standby service.

The pumping station in the valley below the filtration plant is a self-contained unit, since it generates its own power for the operation of the pumps and for the operation of all electrical equipment at the filtration plant. Thus this plant is entirely independent of all outside sources of power. The prime movers for producing electricity are one 3-cylinder Fairbanks-Morse 250-hp diesel and one 4-cylinder 300-hp Fairbanks-Morse diesel, each connected to an alternating current generator delivering power at 440 volts. A large Maxim silencer is attached to the exhaust of each diesel engine, so that the usual noisy exhaust is completely eliminated. Complete control of the electrical generation is centered on a Westinghouse multiple-panel control board with F-M controls.

The two large diesel engines are started with compressed air at 250 pounds per square inch pressure from three Scaife steel tanks. An F-M motor drives an F-M compressor to maintain these tanks at the proper pressure. A duplicate air compressor is installed in the pumping station, driven by a F-M gas engine. Over both diesel engines are monorail trolleys with chain falls to permit the handling of any parts of the engine for repair or overhaul. Two F-M circulating water pumps are installed for cooling the diesel engines, and these two pumps are alternated weekly. Either is capable of taking care of the circulating water requirements of both engines. A heat exchanger cools the water from the diesel engines and sends the cooling water back into the plant line, while the water used in the engines is a closed circuit with an open balancing tank with float valve on the wall of the station.

Fuel oil for the engines is delivered by tank truck to the station, and if the truck is equipped with a pressure pump it delivers the fuel oil direct to a 15,000-gallon hillside storage tank. If the truck is not so equipped, a small F-M fuel pump in the station is attached to the truck and delivers the fuel oil to the hillside tank. Two lines are provided for delivery of the fuel oil from the large storage tank to the two 300-gallon day tanks installed outside the plant underground. One of these lines is gravity flow, but if this line should become plugged, the suction of the fuel oil pump in the station is reversed and may be used to draw fuel oil from the hillside tank and deliver it to the day tanks. A ¾-inch Niagara disk meter is installed on each day tank to measure the delivery of fuel oil to it.

*Interior of the New Britain Plant, showing the Aeration Equipment in the Foreground*

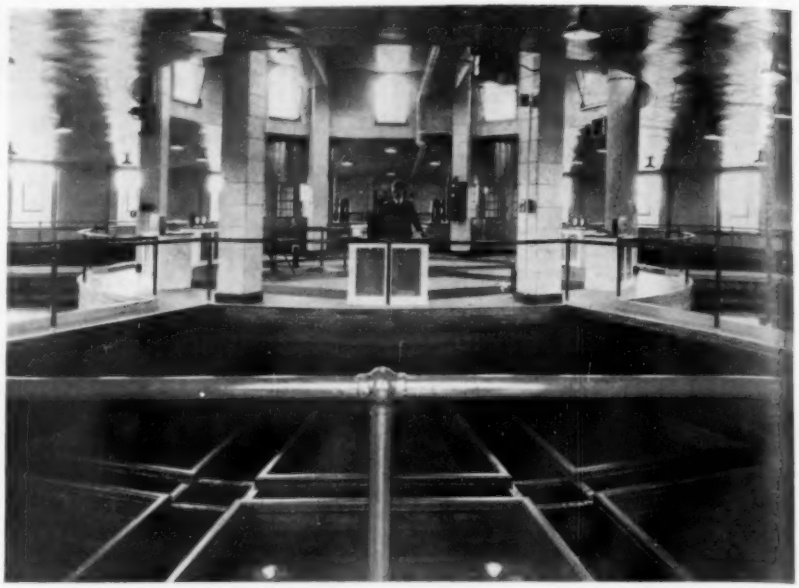
The pumps for delivering water to the filtration plant are three in number: two 4-mgd F-M centrifugals, and one 6-mgd F-M centrifugal, with F-M induction motors of 100 hp for the smaller pumps and 150 hp for the larger pump. Ludlow check-valves are installed on the discharges of all pumps, and Ludlow gate-valves on both the suction and discharge lines of each pump. All 30-inch cast iron lines are special high-strength pipe. The maximum lift to the plant, including both static and friction head, is 98 feet, while the average is about 70 feet.

*The Settling Basins Surrounding the Filters and Control Equipment; Wash-Water Tank Above*

## Head House

The rectangular head house of the filtration plant at the top of the hill is faced with weathered trap-rock taken from the watershed. The water entering the head house from the pumping station receives chemical treatment immediately, including alum, soda ash, and activated carbon when required. At the back of the head house where the chemicals are added is also a circular mixing basin where the chlorine and lime which are added to the filtered water are applied as the water flows over a weir installed to keep a proper head under the filters and prevent a vacuum from occurring beneath the beds. Two 24-inch cast iron lines lead from this mixing chamber to the two 1.75-mgd steel clear water tanks. Adjacent to this mixing basin is a Wallace & Tiernan chlorinator with Niagara Alkali Co. chlorine cylinders on a Fairbanks scales at floor level. The heating plant is conveniently located adjacent to the chlorinator, and consists of an oil-fired boiler. On the opposite side of the mixing station is a long, horizontal tank with a Kellogg garage-type compressor mounted on top of it, which keeps about 52 pounds of air pressure in the tank above the water for the operation of hydraulic valves throughout the plant.

As one enters the main door of the head house, there is a Kelvinator drinking fountain flanked on either side by a recording Builders Iron Foundry venturi meter and a recorder for the elevation of water in the clear water tanks. A reception room and storage room complete the first floor of the building. On the second floor is the plant superintendent's office, toilet, locker room and laboratory, and the chemical feed room, where four Wallace & Tiernan dry chemical feed machines are installed. On the third floor is the chemical storage, to which the bags of chemicals are raised from ground level by a freight elevator.



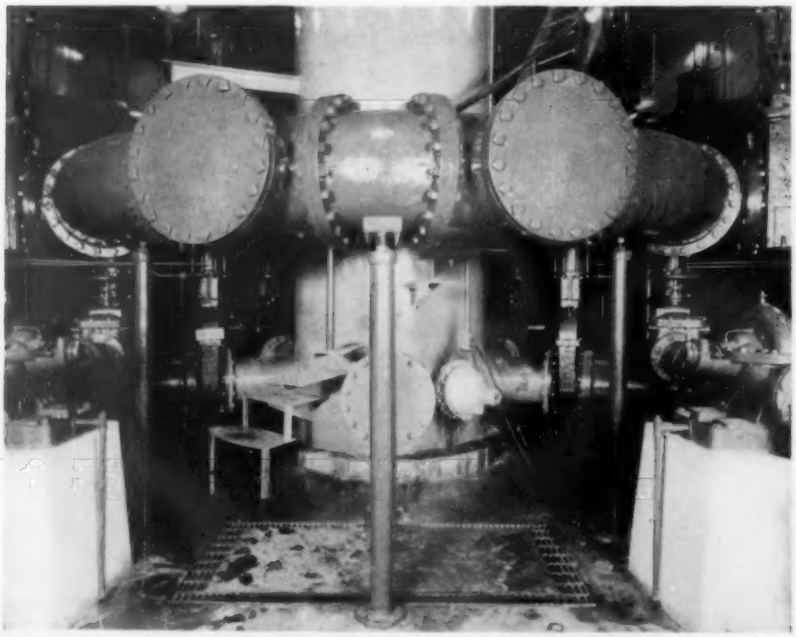
*The Operating Floor at the Center of the Morse Filter Plant at New Britain, Conn., and an Empty Filter in the Foreground, Showing the Steel Wash-Water Troughs*

## Chemical Treatment

The average alkalinity of Shuttle Meadow water is 15, while that from Whigville is 7. The color from Shuttle Meadow averages about 20, and that from Whigville about 16. When the plant is treating and filtering Shuttle Meadow water, an average of 0.57-grain per gallon of alum is added, or 0.50-grain per gallon on Whigville, or 0.55-grain when a combination of the waters is used. Soda ash is used only on the Whigville supply, and the dose ranges from 0.15- to 0.2-grain per gallon.

Activated carbon is used only for taste and odor control during those seasons of the year when algae predominate. The average dosage is around 20 pounds per million gallons of water treated.

Lime treatment averages about 0.32-grain per gallon for the Shuttle Meadow supply, 0.42-grain for the Whigville supply, or 0.32-grain when a mixed water is treated. The chlorine dose remains practically constant at 2.5 pounds per million gallons.



*General View of the Circular Pipe Gallery of the New Britain Plant, Showing the Clear Water Well in the Center and Connections to the Filters and Settling Basins*

## Aeration and Settling

The filtration plant is reached by a steel bridge from the second floor of the head house. The walls and ceilings of all corridors and stairways in the head house, and all the steel construction of the Morse filtration plant, are lined with cork insulation, which greatly reduces noise and, more important, eliminates sweating of the walls due to condensation of moisture from the air.

The chemically treated water from the head house is delivered to two 5-mgd Vogt motor-type Aer-O-Mix units driven by U. S. motors. The water is then released into two enclosed aerators which are vented to the roof to permit entrained gases released from the water by the aerators to be dispersed. The entire plant is divided into two complete units, starting with the aerators. The water from the aerator flows to a single basin equipped with two slow-moving paddle mixers driven by Westinghouse motors through Foote Bros. Gear & Machine Corporation reducing gears. These basins contain 16 feet of water, and each paddle is a single two-arm unit. Water enters the bottom of one corner of the basin and flows out at the top in the opposite corner to the outside settling basin through a flume beneath the entrance bridge from the head house.

(*Concluded on page 85*)

# Local Government Is News—IX

## *Taking City Hall into the Home and the School—by Radio*

*By* PHILLIPS BRADLEY

ONE of the most important developments in public relations—at every level of government—is the increasing use of the radio. A recent study by the International City Managers' Association shows that at least one in every four cities of over 50,000 population now makes use of the radio. A few cities—notably Camden, Dallas, Jacksonville, New York and St. Petersburg—own their own radio stations.

Here is one of the most important media of making citizens aware of what City Hall is doing—and trying to do. The radio is perhaps the most flexible of all the media of public information, in the uses to which it can be put and the variety of programs which can be presented. These vary from a special broadcast which may be to announce an important civic occasion or a special item of information to the citizens, all the way to a more or less extended series of broadcasts built around many different topics.

The first type of use is particularly valuable for making citizens aware of the city's problems or policies. For instance, a delinquent tax collection campaign, a fire prevention week, a proposed bond issue, can be explained most easily—directly and universally—over the radio. A number of cities have used the radio in these and similar fields. There are of course many questions which lend themselves readily to the radio. In fact, there is no municipal question of general interest which cannot—and should not—be brought home to the citizens while they are dialing their own radios. For instance, the opening of city parks and playgrounds, special recreation or other programs, deserve more than a printed notice in the papers or on bulletin boards in public buildings. Any local policy or program—those noted above and many others—can be most effectively interpreted to the local community over the radio by the officials who are themselves concerned with their development.

Here is one way in which every City Hall in America can make its services and activities better known to the public. Even if a city does not own its own radio station, it will generally be possible to obtain time on the local stations for individual broadcasts of this type.

> ***There is no community of 25,000 or more that cannot develop a worth-while and interesting radio program about municipal affairs. The returns are intangible but not less real. They make the citizen—from high school on—a better-informed and therefore a more effective supporter of good government.*** ***THE AMERICAN CITY is interested in learning about what is going over the radio in different cities. Write the Editor; send in samples of your programs.***

But this type of broadcast by no means ends the effective use of the radio by City Hall. When we come to look at what has already been accomplished, it is interesting to see how many effective radio programs have been developed by some of our city officials.

### Four Types of Programs

In general, four types of programs have been utilized—talks, dramas, interviews and round table discussions. The first, of course, is the simplest and easiest to arrange. The Mayor, City Manager, department or bureau heads, councilmen and other city employees, can be scheduled to present issues, programs, and policies in the fields with which they are best acquainted. Programs of this type have been developed under such titles as "Know Your City," "Our City," "Your Town," "Inside City Hall," "City Hall News Program," "The Mayor Talks."*

Such general programs do not end the list of possible series. Departmental programs can—and should—be developed around the activities of most interest and concern to citizens. Many cities have developed programs under such titles as "Your Public Library," "Fire Prevention Hints," "Know Your Schools." Libraries and schools can of course develop more specialized programs around their specific activities. "Book Hours" on the air, school concerts and debates, are only a few of the fields which ingenious officials in these departments have developed.

The other types of programs—dramas, interviews and round table discussions—can also be utilized. Interviews with city officials can be made effective educational devices both in the home and in the school. A single interviewer chosen for radio ability can arrange a series, and develop a program for each broadcast that will almost certainly build up an increasing audience. Round table discussions on proposed policies can also be made highly effective educational devices in the home and the school.

### Dramatic Radio Programs

A few cities have developed their own dramas. Perhaps the most lively of these have been the radio skits put on by Dallas, Texas, developed by the initiative of City Manager James W. Aston, and Information Director Compton. These 15-minute sketches deal with the various activities of the city. The series covered all the major departments and activities of the city. The Welfare Department cast of characters included, for instance, the City Manager, Mr. and Mrs. John Dallas, and Johnny Dallas, their ten-year-old son; the Director of Public Welfare, his secretary, juvenile advisor; and Mrs. D., a relief client. The sound effects included street noises, footsteps, typewriter, buzzer, and opening and closing doors. The program itself was a lively interview in the City Manager's office, with all hands on the program taking an animated part. There was a combination of factual information about relief—eligibility, amounts payable, etc.—and of *ad libbing* in which all the characters had an opportunity to insert ideas and pointed comments.

A number of other cities have developed dramatic radio programs which include music and other features. Whatever type of program is used, however, to put over city affairs,—and probably a variety of these types will prove most effective in the long

* See "Reportive Municipal Activities by Radio," by D. D. Rowlands, in *Public Management* for April, 1941, page 102.

run,—the use of the radio as a means of civic education by City Hall has already proved its worth.

A word may also be said about school programs. Most of the programs emanating from City Hall should be routed to the schools. When a program occurs at an hour when school is not in session, the program may be re-broadcast either directly or by a recording. Most local privately owned stations can be easily induced to carry out such a special school program—not only because they are required to devote a considerable percentage of their time to educational programs, but because their daytime load is generally not as heavy as the evening.

### Free Time—15-Minute Programs

Only a few cities have found that they had to pay for time—and then generally only when they demanded the most valuable evening hours. It is an item worth carrying in the budget to obtain some of the best radio time for civic programs. In most cases, however, if cordial relations are established, City Hall can obtain a good place on the program for an effective radio series.

A 15-minute broadcast is more likely to hold attention than a longer one. Especially if the series is being built up around interviews or dramas, a regular 15-minute program once or twice a week will do the trick. It is important to establish a regular time for a series—not let it skip to different hours or be put on intermittently—so that the citizen will know when to dial for his city program.

City-owned stations vary in their management. In New York City the entire program is non-profit, arranged exclusively by the staff of the station. In Jacksonville, Fla., the city-owned station admits privately sponsored programs of civic interest. It does not sell time for programs of a political nature or to candidates at elections. In 15 years it has returned over $425,000 to the treasury from this source. In 1940 its net revenue was over $82,000. The operating cost at Jacksonville is about $77,000, in New York about $120,000 a year.*

### Developing Municipal Programs

A few hints may be offered as to effective procedures for developing municipal radio programs:

1. The first criterion here—as for any private program—is public interest. An educational or information program does not need to be dull. It can be produced so as to sustain—and increase—public interest and listening.

2. To develop such a program, it is probably most effective to assign a single individual to do the job. Such a person, although he may not have previous radio experience, can learn the tricks of the trade and can do a better job of organizing a series (or even individual broadcasts) than different individuals from time to time. It will be useful also to provide him with an advisory committee of city officials and of interested citizens to help in the planning and production of the program.

3. A single individual should also be assigned the immediate radio job—introduction of speakers, interviewing, commentating, etc. A person with a flair for this kind of work—and a flair for it can be developed by anyone who is interested—can get "attention" for the series by the quality of his introductions. Anecdotes and stories about the topic of the immediate broadcast can help to make the program go over.

4. Programs should be concise and to the point—making citizens aware of what their servants at City Hall are doing and trying to do. Speakers should be selected more for their ability to get the points across than for the position they hold. Frequently the two run together—but not always.

* For further information on municipally owned stations, see "City-Owned Radio Broadcasting Stations," by D. D. Rowlands, in *Public Management*, July, 1941, page 204.

**CAMDEN'S BROADCASTING STATION**
*Where the transmitter is housed and adjoining antennas located, in the Civic Center, a large area directly opposite the Convention Hall in Camden, N. J.*

*The Studios of WSUN, located on the Million Dollar Recreational Pier at St. Petersburg, Fla., During the Broadcast of "Dickens Christmas Carol," Presented on the First Sunday After Christmas, 1940*

# Cold or Hot Plant Mixes?

## *A Careful Study of Costs and Methods in City Paving Work*

*By* HENRY L. HOWE
City Engineer, Rochester, N. Y.
and
H. WALTER HUGHES
Supervisor, Tests and Materials, Division of Engineering, Rochester, N. Y.

THE city of Rochester, like most other cities in the East, at least since the depression, has gradually fallen behind in its pavement work. It is now attempting to catch up in its needs by reconstructing many miles of old paved streets. This need has been greatly accelerated by the rapid abandonment of many miles of street-car tracks. Consequently, the need for obtaining either hot or cold laid asphalt paving mixtures of proper quality and cost beyond that produced by the city's own hot mix asphalt paving plant (capacity about 200 tons per 8-hour day*) has been a much greater factor than the relative merits of the two types—hot or cold laid mixtures.

With the advent of relief work, pavement projects for which the sponsor — the city — furnishes the equipment and the greater portion of the materials, the awarding of contracts for constructing pavements almost became a thing of the past, except on some of the work done by the State Highway Department within the city under Federal grants or on grade-crossing elimination projects. It was therefore logical at least, for the city, faced with the need for an expanding pavement program, to do the work with its own forces. This work is supervised by its own inspectors, engineers and superintendents and uses city-owned equipment. These conditions led not only to the purchase under contract of cold laid pavement top and binder mixtures, delivered to the street, to supplement the tonnage from the city's own hot mix plant (used for maintenance as well as reconstruction) for WPA paving projects, but also to the paving projects being done by the city's own forces. These conditions made it necessary to purchase under contract hot plant mixed top and binder mixtures delivered to the street, made from materials furnished to the mixing plant contractor under the city material contracts.

Previous to 1935, the city used as its standard hot paving mixture the stone-filled sheet asphalt type with an asphalt binder or leveling course of close graded stone and sand types. However, since about 1935 the city of Rochester has been using a fine graded non-skid asphaltic concrete type of hot asphalt pavement mixture produced at its own plant. This mixture was developed in our laboratory and is similar in grading to the Colprovia type used locally, in which the use of sand has been eliminated and crushed stone used for the total aggregate. No ground limestone dust filler is required with this non-skid type of mixture as in the case of the stone-filled sheet asphalt mixture. In fact, the inherent stability of this fine stone mixture is such that it is often used as a binder mixture or leveling course in place of the close stone graded asphalt binder mixture, with equal success. This avoided loss of time on deliveries caused by changing over the plant for the production of the stone binder mixture.

The high inherent stability of this type of stone mixture permits the raising of the penetration limits of the asphalt cement used in its manufacture over that formerly specified for use in the stone-filled sheet type. In 1940 an asphalt cement of 70-80 penetration at 77° F. was used. We have also incorporated in our specifications for asphalt paving cement a ductility requirement at both 77° F. and 60° F., as well as a requirement for ductility on the recovered asphalt that has been previously oxidized by the Shattuck method and recovered by the Abson method. These additional specification requirements were added in an attempt to protect the city against purchase of asphalt cements that will harden excessively during mixing and transportation or in the pavement.

The dense, fine graded non-skid stone mixture now being produced at the city's hot mixing plant meets the following grading requirements:

| | Per Cent by Weight |
|---|---|
| *Asphalt Cement | 7.5 to 8.5 |
| Passing 200-mesh sieve | 8.0 to 10.0 |
| Passing 10-mesh, retained 200 | 45.0 to 55.0 |
| Passing ¼"-mesh, retained 10 | 33.0 to 38.0 |
| Passing ⅜"-mesh | 100 |

* NOTE: Ordinarily a properly designed dust collector system will be required at the plant to meet these limits for material passing the 200-mesh sieve.

The grading limits for this type of mixture are dependent, of course, upon the crushing characteristics of the stone aggregate used, as well as upon obtaining in the resulting pavement a mixture of proper stability and density with 3 to 6 per cent voids, that can be properly handled in the streets during laying by either hand raking or machine finishing, and which will give the proper non-skid type of surface without the need of any seal coat. We have controlled our hot mixtures during the past season so as to obtain the lower limits of +10 materials and the higher limits of bitumen content. The lower +10 stone content seems to provide a more uniform pavement surface with fewer porous spots due to segregation, and a satisfactory non-skid surface.

### Costs

The average cost of this hot non-skid top mixture, exclusive of profit, but including overhead, is about $5.40 per ton at the plant, plus $2.53 per ton for trucking and laying, making a total cost of about $8.00 per ton laid in the new pavements constructed by the city's own forces. About 22,000 tons of this top material was produced in 1940

* EDITORIAL NOTE.—Since this article was written, Rochester's asphalt paving plant has been reconstructed so that its capacity is now double that mentioned above.

at the city's own hot mix plant, part of which was used for pavement maintenance. In addition, about 11,000 tons of hot close graded stone binder or leveling course mixture was also produced by the city, almost all of which was used in constructing or reconstructing pavements.

To supplement the city's own production of hot close graded stone binder or leveling course mixtures, the city purchased under contract about 7,500 tons of N. Y. State Type III course or binder mixture. This mixture is laid cold, being similar to the old Amiesite type of mixture using a naphtha or other type of solvent to obtain the cold laying qualities. The Type III binder mixture is purchased by the city under contract at $3.45 per ton delivered to the street, which is equivalent to about $5.50 per ton in the pavement.

The city also purchased about 8,300 tons of Colprovia top mixture under contract at $6.50 per ton, delivered to the street. In comparing this price with the estimated cost of the city's own hot top mixture, one should take into consideration the factors of profit, taxes and a very long haul in the case of the cold laid material. The city under this contract must pay $6.00 per ton delivered for the Colprovia binder course mixture, but did not purchase any Colprovia binder mixture during 1940.

The city also purchased under contract 1,869 tons of hot close graded stone binder and 6,956 tons of non-skid hot top mixture, each at $4.24 per ton delivered to the street, the city furnishing through its material contracts the stone and asphalt cement to the mixing plant of the contractor. Adding the cost of laying, the binder mixture cost $8.10 and the top mixture $8.51 per ton in the pavement with the mixtures purchased under contract as described.

The city has also had experience with the use of the Laykold method of obtaining cold laying characteristics with the fine graded asphaltic concrete (non-skid) type of pavement mixture using all stone aggregate as described above. The cost of this type of cold laid mixture bid under a construction contract in 1934 was $9.50 per ton of top mixture and $6.25 per ton in place for the binder mixture in the completed pavement. This contract required about 500 tons of top mixture and about 250 tons of binder mixture.

## Cold Laid Pavements

This discussion of cold laid mixtures is limited to a comparison of such asphalt pavement mixtures as are used in city pavements, and compact, under rolling or traffic, to a dense surface course with a void content, ordinarily, not to exceed 6 per cent. Such mixtures consequently do not require a seal coat. This of course eliminates from our discussion such cold laid mixtures as depend primarily upon the vaporization of a solvent such as naphtha to obtain the cold laying properties.

Consideration will therefore be given to mixtures which depend for their cold laying properties upon (a) the use of a powdered hard asphalt combined in the mixture with an asphalt flux oil of suitable characteristics, which after a period of time will combine in the pavement to form an asphalt cement of suitable type and quality; (b) mixtures which depend upon the use of an asphalt paving cement combined in the mixture with suitable emulsified asphalt of relatively high penetration—usually called a tempering fluid; (c) mixtures which use a quick-setting emulsified asphalt containing asphalt having a penetration of 150 to 200 at 77° F., added to the cold, damp or wet aggregate; (d) mixtures having cold laid properties due to the addition of a mixture of asphalt cement, flux oil and steam by the steam dispersion method.

The Colprovia proprietary types of cold laid mixtures are covered by section (a) of the preceding paragraph. The Laykold proprietary types of cold laid mixtures are covered by section (b) and the non-proprietary cold laid mixtures made from emulsified asphalt are covered by section (c). The "Steamix" mixtures are covered by section (d) and are proprietary.

It has been claimed that these cold laid mixtures have an advantage over the hot laid mixtures in that the asphalt cement in the cold mixes has better physical properties in the pavement due to the low temperatures of mixing, transportation and laying. Except when the cold laying properties are obtained by the use of solvents, this claim seems to have some merit, provided that the resulting asphalt cement in the cold laid pavement is of as high a quality as the asphalt cement in the pavements of the hot laid type. However, the use of improved specifications to obtain asphalt paving cements that will not harden excessively during heating, mixing, transportation and laying, or in the pavement after years of use, may make these claims unfounded in the future.

Again, it is claimed that the cold laid mixtures classified in (a) above will hold more asphalt cement for a given aggregate grading than the hot laid types of mixture, without loss of stability or resulting in a slippery surface. There seems to be some basis for this claim. The reason is probably the ease of obtaining more uniform distribution of the asphalt in the cold mixtures than in the hot mixtures, due to the character of the constituents going into the cold mixtures to form the asphalt cement. This contention seems to be true in the case of the cold laid type (a) made from powdered asphalt and flux where an asphalt cement in the pavement can be obtained having a penetration corresponding to that used in hot type mixtures. However, for the cold laid type (b) or (c) where asphalt emulsions are used, or in type under (d) resulting in relatively high penetration asphalt in the pavement, it is necessary that the quantity of asphalt in the mixture be carefully controlled so as not to obtain an excess of asphalt which will produce instability in the pavement. In fact, it is claimed that by the use of the double atomizing of the asphalt and flux by the steam dispersion method to the aggregate heated to between 175° to 250° F. it will thoroughly coat the dense mix aggregates with at least 15 per cent less asphalt than is ordinarily used in the hot asphalt mixes, thus allowing the use of higher penetration asphalts, and still obtain proper stability in the pavement due to the higher internal friction resulting from the use of the thinner films of asphalt.

(*Continued on page 79*)

# British Local Government Carries On

IN the July, 1941, issue of *Local Government Service*, the official journal of the National Association of Local Government (NALGO), the wide range of municipal activities and interests of the Association is represented, and incidentally, but significantly, on a page of humor is given the following indication of the national spirit:

Morale

**Best story of the blitz in Scotland is of two old women trying to tidy up the remnants of their wrecked home in Glasgow. One says to the other, "Well, Maggie. These bad blitzes certainly make one forget the war, don't they?'**

Among the topics considered in this issue of the journal are the following: the death and disablement insurance scheme adopted by Coventry Corporation for its civil defense workers in supplementing the official allowances; the Croydon Branch plan of mutual aid between the officer, called up or bombed out, who has more furniture than he has room for, and the man who cannot meet mortgage charges or rent and who has more room than he needs; safeguarding records of personal affairs by depositing duplicate copies in protected places from which they can be recovered should homes or lives be destroyed; a call for the nationalization of all land, and the creation of a National Planning Authority to supervise post-war construction, submitted by NALGO under the topic of "How We Would Rebuild Britain," at the request of Lord Reith, Minister of Works and Buildings, to the Expert Committee on Compensation and Betterment; the NALGO Military and Civilian Roll of Honor—killed, missing, prisoners of war.

"Look—a skylark!"

ARCHITECT'S SKETCH OF PROPOSED NEW HEADQUARTERS FOR NALGO

*Several meetings have been held during the year to complete the purchase of the Abingdon Street properties and to consider a scheme of rebuilding contemplated before the outbreak of war. After drawings and elevations of the proposed new building had been submitted to the members of Parliament for criticism, the purchase was completed, but the whole scheme has been "frozen," including the arrangements with the architect, until more propitious times for considering the next stage*

The points presented in this brief summary of a vital publication suggest what makes the work of the Association important and worth while. For its financial record during 1940, reference should be made to the 180-page pamphlet, "N. A. L. G. O. in War Time" (see page 121 of this issue), from which has been reproduced the accompanying sketch of the proposed new headquarters of the Association.

The wise scope of NALGO's activities and the substantial funds it has accumulated are evident from this report. As of December 31, 1940, the Association and its associated activities had net assets of:

| | £ |
|---|---|
| General Funds | £38,875 |
| General Reserve Fund | 80,894 |
| Superannuation Fund | 59,000 |
| Benevolent and Orphan Fund | 67,346 |
| Provident Society | 248,559 |
| Approved Society | 234,075 |
| Building Society | 4,616,892 |
| Logomia* | 571,645 |
| | 5,937,286 |
| Holiday Centres (Deficit) | 11,041 |
| Net assets | £5,926,245 |

* National and Local Government Officers' Mutual Insurance Association, Ltd.

It should be noted that the total figure above includes the sum of £5,367,107 belonging to shareholders, depositors, and members of the various sickness and insurance schemes, etc., leaving a net excess of assets over liabilities of £559,137.

WILL IT COME TO THIS?

Mayoral Procession, 1942

CARTOONS FROM LOCAL GOVERNMENT SERVICE, LONDON, ENGLAND

# Municipal Pumping and Lighting with Diesels

By William H. Gottlieb
Williston Park, L. I., N. Y.

MANY cities wishing to provide essential municipal services at the lowest possible cost without necessarily engaging in the business of electrical sales to private consumers, have found the answer to this problem in moderate-sized diesel plants. It is a happy circumstance that street-lighting and pumping loads are not concurrent and, as complementary functions, together provide a steady load without the necessity for a commercial-sized power plant. Bradenton, Fla., has found that the demands for the two services can be blended neatly with considerable saving to the city.

Bradenton began its experience with diesels in 1928, with construction of its pumping station. One engine sufficed, but a building large enough for three was erected. This confidence in the city's development has been justified, and the plant now contains three diesels supplying all power for street lighting as well as pumping. The engine installed in 1928 was a three-cylinder, 180-hp Fairbanks-Morse diesel operating at 257 rpm.

In 1934, Bradenton's plant was still exclusively a pumping station, operating at peak efficiency with a variable load. It was decided to purchase a second engine of smaller capacity to handle the light loads of evening and early morning. The city's second diesel was a F-M 75-hp 2-cylinder engine 18 years old when purchased, but it continues to give satisfactory service.

It was clear to the city's engineers that they could increase the efficiency of their power plant and effect larger savings in power costs if the plant supplied street lighting as well as pumping needs. Expiration of the lighting contract with the local private utility provided an opportunity to take on the street-lighting load, and in March, 1939, the city purchased a 150-hp, 2-cylinder, 14 x 17, 300 rpm F-M diesel generating unit. This engine employs single-stage combustion of fuel and automatic back-flow scavenging. Two months later, the original engine was equipped with latest-style cylinder, pistons, heads, fuel-injection pumps and nozzles, to bring it up-to-date. Since these change-over parts were supplied in such a manner as to make them interchangeable with the old parts on the original engine base, the city enjoys at small expense the same added economy available in its newest machine. Chief Engineer Edward Porter reports that since the change-over, and without added operating cost, he now obtains 22 per cent more power from this 13-year-old engine.

## Fuel and Oil Supply

Fuel is stored in a 30,000-gallon tank above ground and flows by gravity to a separate 300-gallon underground tank for each engine. Lubricating oil draining to the crankcase is pumped through a cartridge-type filter and then collected in a container. Periodically, this oil is put through a fullers-earth filter and the clean oil is returned to the engine supply-tank. No dirty oil ever enters the engine.

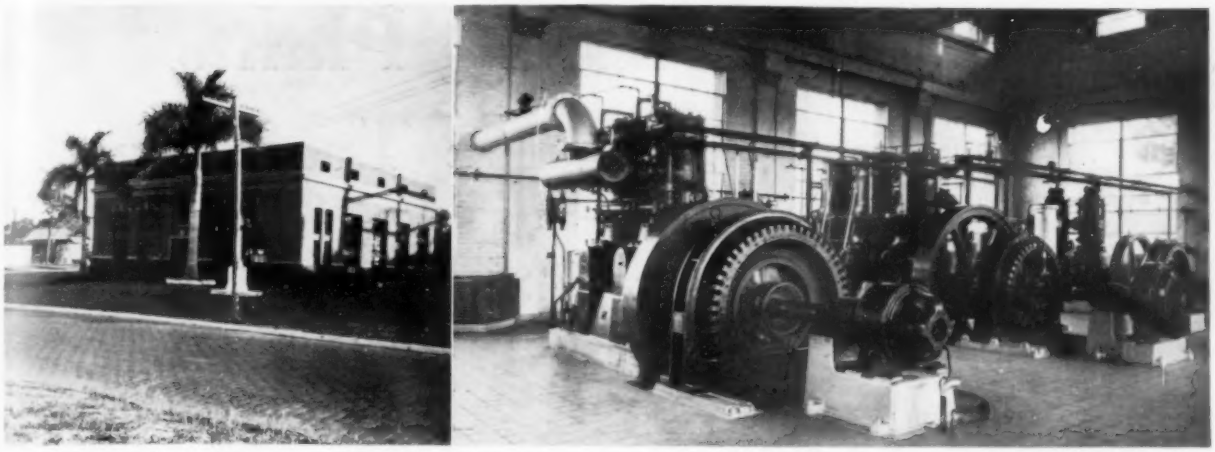
Originally, an open cooling water system was used, with jacket water poured over an atmospheric cooling tower. The present system is closed and only rainwater collected in a 3,000-gallon concrete vat is allowed to enter the cylinder jackets. This soft water is circulated through the engines and a shell-and-tube heat exchanger by means of a motor-driven centrifugal pump. A similar pump takes raw water from the city's overhead tank, puts it through the heat exchanger and returns it to the nearby city reservoir. A third pump is available for emergency use on either the raw- or soft-water lines.

Exhaust headers of the two larger engines open into pipes which extend through the side wall of the plant to vertical silencers outside. The 75-hp engine has an expansion pit underground from which gases vent through a standpipe. On each of the two newer engines, pyrometers measure exhaust temperatures. Intake air for the new engine is drawn through a filter inside the engine room.

All the engines are arranged for air starting, and air for this purpose is supplied by a 4½ x 4 vertical compressor belted to a 7½-hp motor. For emergency use there is a 3 x 4 compressor driven directly by a 3-hp gasoline engine. The eight-panel switchboard has a full complement of instruments, including a voltage regulator and a synchronoscope. There are also water-pressure gages and flow meters for the city system.

The primary function of the diesel plant is to supply nearly a million gallons of water per day for city consumption. The quantity of water used rises steadily each year and has nearly quadrupled in the last seven years. The water comes from the Braden River, 6⅓ miles away, through 16-inch pipe, and comparative levels are such that only a small lift by an automatic station is required to handle the primary pumping. Reaching the city, the water passes through a $230,000 treatment plant placed in service in December, 1939. The diesels supply power for purification and high-lift pumping.

Two centrifugal pumps, each capable of delivering 1,250 gpm against a 40-foot head, take water from the treatment plant and discharge it into a 500,000-gallon reservoir. These pumps are driven directly by 20-hp motors. Another pair of 650-gpm centrifugal pumps take water from the reservoir and



*Showing the Attractive Exterior and the Fairbanks-Morse Diesel-Electric Units of the Bradenton, Fla., Municipal Plant*

discharge against a head of 150 feet into an overhead tank from which it flows to the city by gravity. These pumps are driven by 30-hp motors. A third centrifugal pump with capacity of 1,250 gpm against a 155-foot head and driven by a 60-hp motor, also transfers water from the reservoir to the high tank.

Throughout the daylight hours, the large pump puts water up into the overhead tank, filling it by sundown. When the pumps are shut off, the street lights go on. Water in the overhead tank suffices until midnight, when one lighting circuit goes off and a small pump is started. In the morning, all lights go off and the large pump returns to action.

For emergency use, the plant contains two 150-hp Sterling gasoline engines, directly-connected to centrifugal pumps each rated 1,750 gpm against a 160-foot head. There is also one 100-hp gasoline engine driving directly a centrifugal pump of 1,500 gpm against a 60-foot head. There have been no diesel breakdowns, and the only time the emergency equipment was used was when a main burst and the plant's full pumping capacity was required to keep water in the tank.

Bradenton officials are satisfied that the diesels have effected substantial economies for the city. Street lighting has been extended greatly and it is estimated that the city gets five times as much light for $13,000 a year less than formerly.

Of the total expenditure of $7,442 for the fiscal year ending June 30, 1940, it is calculated that 52 per cent is chargeable to lighting and 48 per cent to pumping. Since approximately 229,000,000 gallons of water were pumped, it will be seen that in this year it cost the city $15.59 to handle a million gallons of water. In the last six months of 1940, as volume of pumping increased over the previous year, the cost per million gallons decreased. The cost cited includes all expenses of the pumping station that can be allocated to the Water Department, including power to operate the filtration plant. The entire sum cannot be charged to diesel operation, since much of the expense of maintaining the pumping station would exist even if power were purchased. Total cost of fuel, lubricating oil and repair for handling 1,000,000 gallons of water was $6.78.

By combining lighting and pumping functions in a single plant, Bradenton has achieved efficient diesel operation and lessened the local tax problem.

PRINCIPAL EQUIPMENT, PUMPING STATION AND LIGHTING PLANT, BRADENTON, FLORIDA

| | |
|---|---|
| Diesel engines | Fairbanks, Morse & Co. |
| Generators | Fairbanks, Morse & Co. |
| Lubricating oil | Standard Oil Co., Diol 65; Texas Co., Texaco Algol |
| Lube oil filters | Purolator, Motor Improvements, Inc. |
| Mechanical lubricators | Madison-Kipp Corp. |
| Heat exchanger | Schutte & Koerting Co. |
| Cooling water pumps | Fairbanks, Morse & Co. |
| Exhaust silencers | The Maxim Silencer Co. |
| Exhaust Pyrometers | Alnor, The Illinois Testing Laboratories, Inc.; Brown Instrument Co. |
| Intake air filter | Cappus Engineering Corp. |
| Starting air compressors | Gardner-Denver compressor driven by Fairbanks-Morse motor; Fairbanks-Morse compressor driven by F-M gasoline engine |
| Switchboard | Westinghouse Electric & Mfg. Co. |
| Voltage regulator | Westinghouse Electric & Mfg. Co. |
| Synchroscope | Westinghouse Electric & Mfg. Co. |
| Crane | Chisholm-Moore Hoist Corp. |
| Water-flow meters | Republic Flow Meters Co. |
| Main water pumps | Pennsylvania Pump & Compressor Co. pumps driven by General Electric motors; American-Marsh Co., Inc., pump driven by an Allis-Chalmers motor |
| Emergency gasoline engines | Sterling Engine Co. |
| Emergency water pumps | Warren Bros. |

## Municipal Kilowatts Are Gold Nuggets

OF THE LEGITIMATE REVENUE-PRODUCING SERVICES which a city government can perform in private-initiative America, by far the most lucrative is the generation and sale of electricity. Those cities owning their own electric facilities are in a fortunate position indeed, for it is a business at which you don't have to lose. The rates which people are accustomed to pay for electricity are bound to return a surplus.

The generation and distribution of electricity is as much a municipal service as the supply of water, the disposal of sewage, the collection and incineration of refuse. Citizens, moreover, are willing to pay for electrical service, and these payments constitute one of the few items of assistance which real-estate taxpayers can enjoy.

STATISTICS OF TEN LARGE MUNICIPAL ELECTRIC GENERATING STATIONS IN 1940

| | Age | Capacity KW | Max. Load | Revenue Total | Operating* |
|---|---|---|---|---|---|
| Cleveland, Ohio | 26 | 50,000 | 44,000 | $3,808,298 | $1,561,495 |
| Detroit, Mich. | 45 | 80,000 | 65,000 | 3,120,744 | ... |
| Jacksonville, Fla. | 45 | 98,500 | 42,500 | 4,134,837 | 2,615,997 |
| Kansas City, Kans. | 28 | 69,000 | 33,800 | 2,511,582 | 1,125,417 |
| Lansing, Mich. | 48 | 87,700 | 46,630 | 2,827,751 | 1,611,623 |
| Los Angeles, Calif. | 24 | 628,949 | 390,100 | 30,173,456 | 16,265,592 |
| Pasadena, Calif. | 34 | 50,000 | 25,700 | 1,733,219 | 856,073 |
| Seattle Wash. | 36 | 237,000 | 120,000 | 6,273,199 | 4,170,802 |
| Springfield, Ill. | 27 | 48,250 | 16,300 | 1,018,875 | 557,080 |
| Tacoma, Wash. | 48 | 148,000 | 92,000 | 2,890,813 | 1,992,388 |

* Depreciation not deducted.

# Food-Processing Plants Complicate Sewage Treatment

## *Westfield, N. Y., with Population of 3,700, Has Double Load from Industries and Infiltration During Storms*

*By* THEODORE C. HILL
Hill & Hill, Engineers,
North East, Pa.

WHEN consideration was being given to the construction of a new sewage-treatment plant at Westfield it was thought advisable to examine samples of the wastes from the various industries in Westfield and to study their characteristics, organic loads, and the probable effect on any sewage-treatment process. William A. Ryan, consulting chemist, Rochester, N. Y., reported that the B.O.D. of the wastes from the Welch Grape Juice Co. and the grape juice division of Armour & Co. ran from as low as 220 ppm up to 1,230 ppm, and the suspended solids from 30 ppm to 363 ppm. The amount of water consumed at each plant during the processing season of different fruits and vegetables was tabulated, and from it the volume of industrial waste was esitmated at 300,000 gallons daily. This gave a load equivalent to 3,000 to 4,000 persons, provided the processing plant screened the wastes and neutralized them before discharging the products into the Westfield city sewers.

### Original Treatment Plant

Westfield, in the western part of Chautauqua County, New York, about 1½ miles south of the shores of Lake Erie, was one of the first in this section to install a complete sewer system and treatment plant. This was done in 1911, and the sewer system was unusually expansive for the population, since the village contains approximately 4 square miles. The sewers consist of tile lines from 8 to 24 inches in diameter, laid with oakum and cement joints.

The old treatment plant comprised a grit well, two septic tanks, and four crushed stone contact beds about 4 feet deep. The effluent from the contact beds discharged directly into the creek. A sludge bed was provided for drying the sludge from these tanks.

*A General View of the New Sewage-Treatment Plant at Westfield, N. Y.*

### Plans for New Plant

The new plant, based on studies of the food processing plants and the sewers, it was felt, would have to be designed to take care of an average flow of 750,000 gallons of sewage per day based on gagings made in the main sewers. Added to this is an allowance of 150,000 gallons per day for future gains in population plus an industrial flow of 300,000 gallons and an additional 300,000 gallons per day for future industries, making a total flow of 1.5 mgd.

Owing to roots entering the joints of the main sewer, there is considerable infiltration in the early winter and spring months; but as the peaks of industrial flow come in the late summer and early fall, it is thought that these two will balance rather than pyramid. The sewer system evidently contains one or more bad breaks that are affected by high water in the creek, for flash flows at a rate of 2,000,000 gallons have occurred. These breaks are being located, to put an end to them. The plant as built has handled these flows without any difficulty, for extra distributor arms were supplied on the sprinkling filters to take care of unusual capacities. Flash flows do not increase the solids nor add much turbidity to the sewage.

Complications in selecting a plant site included the need for a greater area for the new plant, and the inability to raise the elevation of the west side interceptor. These were overcome by installing pri-

mary treatment with rectangular tanks, separate sludge digestion and a glass-covered sludge bed, and secondary treatment consisting of a rotary circular sprinkling filter and secondary settling tank. Sprinkling filters require considerable head for satisfactory operation, and in this case it was necessary to raise the initial flow line of the plant about 8 feet. As this was too low to take care of the west side sewer serving the residential area, pump pits were provided in the control house, where float-operated pumps lift the sewage to the inlet manhole.

Sewage from the east side interceptor flows to the plant by gravity. The old sewer was used during construction, and the septic tanks were in operation until the new plant was ready to function. The contact beds were used until after the primary units of the new plant were nearly completed. Then the stone from the old contact beds was screened and washed, and was nearly sufficient to fill sprinkling filter bed No. 1.

## Operation of the Plant

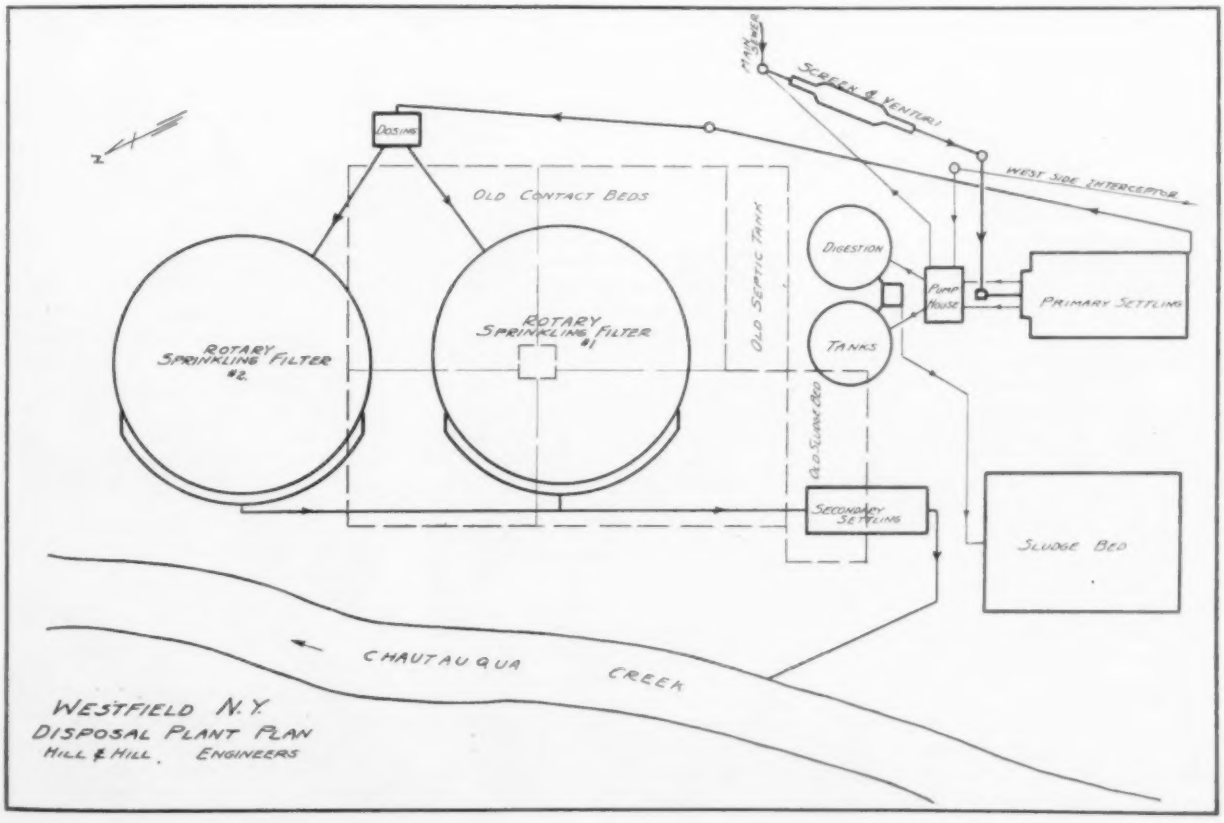
Sewage enters the plant through a grit chamber, the walls of which

*The Rotary Sprinkling Filters, Showing the Main and Auxiliary Arms*

are sloped to provide an average velocity of 0.75-foot per second. From the grit chamber, the sewage passes through a Parshall flume with a 12-inch opening for measuring the flow. There are two primary settling tanks with a two-hour detention period at a flow of 1.5 mgd. Sludge digestion is divided between two tanks, one of which is equipped with a Downes floating cover. These tanks are 35 feet in diameter and 16.4 feet average depth, and have a capacity of 15,000 cubic feet each, or 3 cubic feet per capita for a population of 10,000 persons.

The sludge bed is glass-enclosed and provides approximately 5,000 square feet of drying area, or ½-square foot per capita for a 10,000 population.

Secondary treatment consists of two sprinkling filters, each 110 feet in diameter with an 8-foot bed of stone. Each is provided with two large arms and two auxiliary arms which are controlled by valves



which can be opened by hand in case of excessive flows. The filters are based on a designed flow of 300,000 gallons per acre-foot per day. Effluent from the sprinkling filters passes through a final settling tank which provides a one-hour detention period.

The average flows are between 700,000 and 900,000 gallons per day, which is almost the same as the estimated flow and considerably below the designed capacity. Because of this, the detention periods are longer and the operator's field tests show 80 to 85 per cent removal of settleable solids and a B.O.D. reduction through the plant of 95 per cent. The effluent, even on Mondays when there is considerable soap turbidity, has been very clear and has a better appearance than the water of the stream into which it is discharging. The tests also show that the stability of the effluent is very high.

### Getting Started

In putting the plant into operation the usual number of minor troubles were encountered. The bottom float checks in the raw-sewage well had loosened and dropped off so that they did not give a proper cut-off on the pumps. This was not discovered until it had given considerable trouble. The syphons in the dosing tank for the sprinkling filters failed to shut off at low stage, so that the bells had to be raised a few inches to get proper functioning. The green sludge accumulated in the digestion tank and continued to turn acid in spite of the amount of lime added. In this acid condition, it floated to the top, especially on the inlet side, and tipped the floating cover to a considerable angle. Applications of lime and thorough hosing finally overcame this condition. The gas controls were set for too heavy pressures, and when the weights were lightened the whole gas system worked much better and considerably larger amounts of gas were obtained from the digestion tank. All these things were ironed out quickly, and the plant has functioned satisfactorily since its early days of operation.

The new Westfield sewage-treatment plant was built under a PWA grant of 45 per cent, and the total construction cost was $112,952. The general construction contract was awarded to C. E. Knowles Construction Co., Gowanda, N. Y., and concrete tests were made by the George S. Hallenback Inspection and Testing Laboratory, Buffalo, N. Y. Hill & Hill, of North East, Pa., were in charge of design and construction.

# Federal Agencies and Local Planning

*To the Editor of* THE AMERICAN CITY:

The National Committee on the Housing Emergency is to be congratulated on its Recommendations as summarized in your August issue. The report makes a most timely contribution to national defense effort and, if put into effect, should greatly increase the efficiency of defense.

It is a pleasure to note the emphasis placed on community planning, on properly limiting and fitting industry and defense housing in advance into well-balanced community patterns planned along comprehensive, far-seeing lines. True enough, this constitutes a serious challenge to local planning boards, which too often accept zoning as planning. But, on the other hand, only the Federal Government is fully informed as to where, when and how much industrial housing and other community development, necessitated by the defense program, is to take place. Hence, the obligation of Federal agencies to share the responsibility for local planning.

Defense housing has been allocated to communities in gradual piecmeal, little by little, without due notice of the eventual cumulative effects on the locality. Likewise, most projects insured by the Federal Housing Administration have covered only small areas of land, a practice which has not stimulated a comprehensive planning outlook on the part of local boards. Through the Federal Works Agency $150,000,000 of Federal funds have recently been authorized by Congress to provide sanitary sewers, water-supply systems, schools and other works and facilities for communities being overwhelmed by sudden growth due to defense. It would seem reasonable for local authorities to insist that, out of these or other funds, Federal agencies defray the cost of properly planning a local situation which Federal agencies are creating.

Forethought in community planning is needed at this time, not only to increase the efficiency of defense, but also because new planning principles are in course of development which will prove of major importance in future urban rebuilding.

It is probable that much post-war construction will be by entire urban-community units within our cities—units consisting of physical dimensions and functional features adequate for complete transformation of environment and valuations, and quite possibly to permit any necessary local rent subsidies to be absorbed from the overall profits from a local rehabilitation project. In this new recognition of the urban-community as a distinct unit area within a city, often composed of many lesser neighborhood segments, city planning becomes so simplified that even a surrounding greenbelt might become a practical reality. With some forethought now, it should be possible to locate and design essential physical features so definitely and so speedily that there need be no delay to defense.

New defense population now crowding into some of our cities may be temporary; whereas pre-planned wholesale rehabilitation of blighted areas would be a permanent benefit to our cities. If, however, new defense houses are scattered on isolated vacant lots in blighted areas and in poorly planned defunct land subdivisions on the outskirts of cities, large-scale rehabilitation will be retarded, or huge waste will be involved, in the cost of eventually removing the new houses. If Federal defense housing agencies will devote as much attention to comprehensive community planning as to ways to cheapen costs of construction of cottages, the results may prove of more immediate and permanent benefit to the country.

GEORGE HAMILTON MILLER,
Landscape Architect and Community Planner.
60 Edgemont Road,
Scarsdale, N. Y.

**After Defense—What?**

**How The "Public Work Reserve" Will Operate**

**See important articles on pages 48 and 49 of this issue**

# Complete Cost Accounting and Tax Billing with Punched Cards

*By* HERBERT FALLIN
Budget Director,
City of Baltimore, Md.

PUT the sheer financial size of your municipal government against the sizes of the leading industries and commercial institutions doing business in your city. Take the city of Baltimore, for instance: Its fixed assets in real estate and permanent improvements are worth $427,746,134, and it spends $56,000,000 per year to keep them and their services going.

Seven years ago, Baltimore was like many another city today. It had no general system of detailed accounting which takes the guesswork and estimating completely out of the municipal answers. In those days it was possible to put 1,000 gallons of gasoline into an 800-gallon tank, to order more lead than was needed, to perform gratuitous services amounting to $100,000 a year, to render bills for a million dollars' worth of work and cancel half of them because they could not be certified.

That situation has been completely changed in Baltimore. A financial GPU has been established which knows the movements of every dollar collected and expended by city departments. The system starts with the budget and includes the collection and accounting of all revenues and expenditures. The budget is made by the Board of Estimates comprising the mayor, comptroller, and president of council, as elected members, and the city solicitor and the chief engineer, appointed by the mayor.

In the fall, each department head submits to the budget director his estimate of requirements. These estimates are added up, and the Board of Estimates is apprised of the amount requested. A committee consisting of the mayor and budget director passes on these requests and suggests appropriations. After the Board has approved these, they are prepared as an ordinance for action by the Council, which can eliminate or reduce but not increase the recommended appropriations. Public hearings are held, and finally the Ordinance of Estimates for the year is approved.

The Bureau of Control and Accounts, of which the Budget Director is the head, then sets up an account for each appropriation, as a control. A printed monthly statement is issued showing these figures for every appropriation: the credits; encumbrances; liquidations; cash expenditures; accounting adjustments; unencumbered balance.

Similarly, an account is set up for each class of revenue. The largest, of course, is taxes. The Revenue Control Division of the Bureau of Control and Accounts receives the assessment roll from the Bureau of Assessments, listing valuations of properties in the 498 ledger or control units comprising the city's 28 wards. The tax rate, of course, is determined by the relation between the budget total and the valuation total. Billing in 1942 will be performed by International electrical accounting machines. This is a new departure.

The first step is the machine-made assessment roll tabulated from the assessor's handwritten book. A printed copy of the roll is sent to the assessor for his use hereafter in preparing his next report for tabulation.

Identification is by ward, section, block, lot, with the class of charges controlled through card number for real estate, flat rate, water, and paving, and each parcel uses two or three tabulating cards carrying information as follows:

Card 1: Name, assessment amounts, state and city taxes for that parcel
Card 2: Address, flat water rate
Card 3: Paving assessment, if any

When printing the tax roll, at the end of each control unit (of the 498 sections of the city) the machine automatically throws a total giving the total assessment, total exemptions, state tax, city tax, total tax, total flat-rate water, total paving assessment. By means of an auxiliary piece of equipment known as a summary punch, these totals are punched into a summary card. The 498 control cards constitute the total tax amount for the city.

When a section is proven on the tax roll, these cards are then put through a tabulator which prints the tax bill and also produces summary cards which must be identical with the summary cards punched in making the tax roll. This is absolute verification of accuracy.

Similar punched card operations are performed for:

1. Automobile taxes, starting with 1941 billing
2. Tangible personal property, 1941

In each case, tax rolls and bills are made by the tabulating machine.

At present, all postings are by hand. As taxes are collected, a distribution is made for all the 498 control units by National Cash Register analysis machines. From time to time, in a control unit, a check is made to see whether the unpaid accounts agree with the control card. This is a check on cashiers and to prevent a false entry from getting by. The same type of control is maintained on other billable services, such as water.

## Cost Accounting

At a time when cities large and small are thinking about or examining the possibilities of complete cost accounting, the government of Baltimore has achieved it. Tabulating equipment made it possible here. It could have been achieved by no other means. The great speed and economy of this equipment makes possible this system which means so much to the taxpayers and all the officials of the city. The advantages of such a comprehensive detailed, absolutely accurate, daily, weekly, monthly

control of expenditures are inestimable. Acquaintance with the system soon reveals that it is essential to long-continuing good government. It is an impersonal and inexorable system which in instances may disturb certain political practices and traditions, but in the end it is a safeguard to municipal officials and employees. Under it, all expenditures are controlled, as a private utility or a well-run holding company controls the expenditures of its subsidiaries and departments.

It was some years ago that the Mayor's Efficiency and Economy Committee recommended that a cost accounting system be established. The Cost Division of the Bureau of Control and Accounts was organized by the city to do the cost accounting for every department, with the support of the administration and the public and the cooperation of the departments. The work was organized a department at a time, beginning with the Bureau of Water Supply, having more than 400 cost accounts. When this operation was functioning smoothly, another department was analyzed and a schedule of all accounts was made out. The work now covers completely all revenues and costs of 21 municipal departments.

The originating records, in the case of direct charges paid for in cash are:

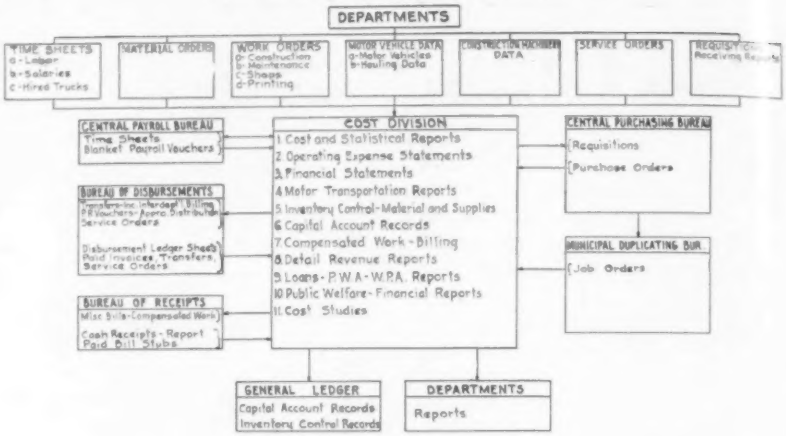
1. The daily labor time sheet
2. The semi-monthly salary roll
3. Purchase orders, service orders, contracts, and interdepartmental transfer vouchers

In the case of indirect charges, the originating records are as follows:

1. Orders on stores
2. Daily labor time sheet (performance ticket covering the operation of cars, trucks, and construction equipment)
3. Shop orders covering shop work

All these costs are punched daily into cards. One basic card is used, with three distinguishing characteristics. A direct charge is punched in a striped card; an indirect charge is punched in a plain manila card; any cards carrying supporting details which do not become direct ledger entries have their right corners cut off. Thus the wrong card in the right file is quickly spotted.

BUREAU OF CONTROL AND ACCOUNTS
COST DIVISION
CHART SHOWING FLOW OF ACCOUNTING INFORMATION




## Use of Cost System

Certain cost reports are made periodically, such as:

1. Weekly labor statement for each department having per diem labor
2. Weekly hired-truck statement for each department
3. Monthly appropriations statement
4. Annual detailed cost statement of operating expenses
5. Monthly disposal record by class of refuse
6. Annual metered-water statistics

These and other reports furnish the department heads with what is called managerial control.

Of even greater value is the use made of the available information by the Cost Division. All these accounts are watched and compared with past records and experience. Any inexplicable deviation from type is questioned. The departments depend upon this prompt questioning, thus conserving energy for present and future performance instead of wasting time on analysis which can be better performed by the central Cost Division.

For all work done, there is a job order showing all labor, materials, and superintendence used on that job. This furnishes real costs. When material is taken from stock, the proper job is charged. The daily time sheets show the materials used each day. Thus all materials are accounted for.

The city performs much work for other agencies, such as private utilities. The careful systematic costs kept assure full compensation. As all costs are correctly charged, the unit costs are accurate, and those of one area are compared with those of another area.

There was once a feud about our costs of truck operation as compared with such costs in another city. A committee was appointed to obtain the facts. Baltimore's costs were complete; those of the other city were not complete. There is power in having at hand the complete detailed costs of all financial activities.

This information, and the power and satisfaction it brings, could not well be afforded without the marvelous skill and capacity of modern tabulating equipment. These machines are the essence of simplicity. They merit sympathetic and grateful study, and their correct use will prove it.

### Award for Distinguished Service

**Will E. Gibson, City Auditor of Portland, Ore., won the first Louisville Award made by the Municipal Finance Officers Association of the United States and Canada for outstanding service by a municipal or other public finance officer during 1940. The Award was made possible through a gift by the city of Louisville. Each year a gold medal and parchment certificate will be given the winner, and certificates of merit and honorable mention will be given to those whose services are outstanding.**

**Mr. Gibson prepared manuals of procedure for the City Auditor's office, the City Clerk's office, the local improvement procedure, and election procedures for the city of Portland. Where the city previously had no general ledger and did all of its work by hand, accounting machines have been substituted and the most modern form of accounting procedures developed. The winners of the certificates of merit and honorable mention were Julian W. Deshaies, City Auditor of Lewiston, Maine; Charles J. Fox, City Auditor of Boston, Mass.; Walter C. Peterson, City Clerk of Los Angeles, Calif.; A. E. Neale, City Auditor of Springfield, Mass.; Wm. "Scotty" Jack, State Auditor of Wyoming; and John J. Schiedel, Secretary of the School District of the Township of Upper Darby, Pa.**

# The Snow-Removal Budget—How Should It Be Fixed?

## *Schenectady Bureau of Municipal Research Offers a Method; Philadelphia Discusses Problem*

TO COPE successfully with snow and ice, a city must be prepared to go into action on short notice in a winter campaign of unpredictable intensity and duration.

Since no one can predict accurately the amount of snow which will fall in any given community during one winter, the problem of financing snow removal has usually been left to the "emergency appropriation" schedule. A nominal sum is provided, which does not fool anyone because every city employee, and most taxpayers, know that the budget sum will assuredly be expended within the first 45 days of winter, but still the moderate item goes in to make the budget look better.

From the Schenectady Bureau of Municipal Research comes a suggestion which might well be given serious consideration by those who seriously desire an honest budget. The Schenectady Bureau calls attention to the fact that in the budget for 1941 the City Council continued to make inadequate provision for snow removal, setting up the item of $13,080, in spite of the following expenditures for snow removal and sanding of streets for the three previous winters:

SNOW REMOVAL AND SANDING STREETS

| | Appropriated | Spent |
|---|---|---|
| 1938 | $11,500 | $35,925 |
| 1939 | 12,700 | 54,266 |
| 1940 | 13,700 | 52,000* |

* To the middle of October.

This is not a criticism of the City Council of Schenectady, any more than of any other city; but it is sad to note that the entire appropriation for 1941 was spent between January 1 and February 12. On Tuesday, March 18, the Schenectady Bureau reports that the total payments and commitments aggregated $25,231.88, with a payroll of $2,047.88 for labor awaiting payment on that date, and a payroll for truck rental due later that week. These figures do not include over $7,600 spent for equipment.

The Schenectady Bureau of Municipal Research offers a very short, proper, and reasonable method of handling the snow-removal budget item. It asks, "Would it not be logical in future budgets to provide an amount roughly equal to the average expenditure of the three prior years?" Such a formula would have suggested an appropriation of about $47,000 for 1941 in Schenectady, instead of $13,700. Officials in charge of snow removal will realize full well that there is a possibility that even this method will not provide adequate funds for snow removal, because there might be three years of comparatively low snowfall followed by one of extremely heavy snowfall. In the long run, however, the method suggested would give a more honest budget item.

### Unpredictable Task

In a recent discussion of this very subject, the Bureau of Municipal Research of Philadelphia points out that the variation in snowfall in Philadelphia, as shown by records of the U. S. Weather Bureau for periods of seven months, October through April, in the last 56 winter seasons, 1884-85 to 1939-40, showed a maximum snowfall of 55.4 inches in 1898-99, while the minimum snowfall was only 4.1 inches in 1930-31. Of these 56 periods, 7 had snowfalls in excess of 35 inches, and 8 had snowfalls of less than 10 inches.

It is further difficult to predict the month in which the heaviest snowfall will occur. The maximum monthly snowfall of each 7-months period during these 56 seasons in Philadelphia is recorded one or more times for each month except October. Obviously, snow in March or April that melts and then freezes may be more troublesome to handle than a snowstorm which remains snow in January or February.

### Limiting the Task

While the amount of snow that must be handled cannot be predicted, cities do limit to some extent the task to be undertaken. Information obtained by the Philadelphia Bureau of Municipal Research during surveys made on visits to eight large cities shows the methods by which snow removal is limited. It is the general practice to give first attention to central-business districts and to remove the snow from the streets in these areas. Outside the central-business district, main thoroughfares are usually kept open and hazardous intersections are cleared. Detroit spreads many tons of salt to melt ice on slippery central-business streets, and places cinders on other icy streets. Pittsburgh and Rochester use both salt and cinders; Washington, D. C., spreads sand, sometimes mixed with calcium chloride. Rochester plows sidewalks and nearly all its streets; while Detroit seldom plows residential streets.

### Providing the Funds

Despite the limitations which a city places upon its snow-removal activities, the amount of work to be done still depends upon the unpredictable snowfall; consequently, the expenditures that have to be made cannot be foreseen exactly. The principal problem is to provide funds for the extra men and equipment necessary to handle snowfalls too great for the city's regular forces. It has been Philadelphia's practice to appropriate

(*Concluded on page 83*)

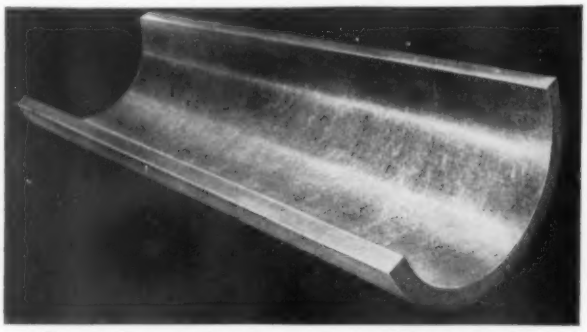
# DELIVERY CAPACITY...

## and how a non-tuberculating pipe helps keep it at a high level

WATERWORKS ENGINEERS generally agree that a water main, even though it remain structurally intact, may completely outlive its economic usefulness over a period of time. This point is reached when the pipe will no longer carry, economically, a sufficient volume of water to meet demand. Such a condition may arise from characteristics inherent in the pipe itself, from increased demand or from a combination of these two causes. Thus, in designing water systems, the engineer is faced with the responsibility of anticipating and solving these problems.

### *A Practical Solution*

To compensate for expected reductions in carrying capacity, specifications often call for larger sizes of pipe than would otherwise be necessary. However, there is another, less expensive solution. In J-M Transite Pipe, engineers find basic advantages that permit them to specify the most economical pipe sizes with full assurance that delivery capacity will not be reduced by



**Transite Pipe provides an unusually smooth interior surface that offers minimum resistance to the flow of water.**

tuberculation, the internal corrosion which, even when present in relatively small degree, greatly reduces the carrying capacity of ordinary pipe.

### *Flow Coefficient C=140*

Transite Pipe is an asbestos-cement product. During manufacture, it is built up on a polished steel mandrel that imparts unusual smoothness to the interior wall. Its flow coefficient is conservatively estimated at C-140. This means that Transite water lines start with an exceptionally high carrying capacity.

### *Economies due to Freedom from Tuberculation*

Transite's freedom from tuberculation means that pumping costs stay low, for pressures need not be increased to compensate for steadily decreasing flow coefficient and resulting loss of head in the line. Not only does this advantage provide worthwhile operating economies, but in many cases it also permits the use of smaller diameter pipe with resultant savings in all the numerous items that go to make up the original cost of completed water lines.

**Tests conducted by the Pitometer Company on a typical Transite water line revealed a flow coefficient of C-145 in service.**

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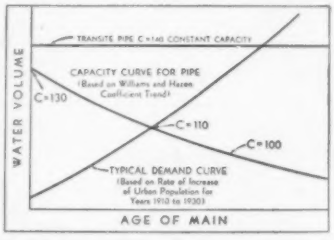
In addition to sustained high carrying capacity, Transite Pipe has other advantages which contribute to more efficient, economical water transportation. In hundreds of American municipalities, it has also played an important part in bringing soil corrosion, joint leakage and electrolysis under control. And in every case low installation costs are assured because of Transite Pipe's long lengths and light weight, and the ease and speed with which Simplex Couplings are assembled.


TRANSITE PIPE C=140 CONSTANT CAPACITY
CAPACITY CURVE FOR PIPE
(Based on Williams and Hazen Coefficient Trend)
C=130
C=110
C=100
TYPICAL DEMAND CURVE
(Based on Rate of Increase of Urban Population for Years 1910 to 1930)
WATER VOLUME
AGE OF MAIN

**As water demand progressively increases, carrying capacity of typical water mains is decreasing, thus necessitating cleaning or the providing of additional capacity. This fact definitely emphasizes the importance of Transite's high carrying capacity and immunity to tuberculation.**

**NOTE TO ENGINEERS: A much more complete discussion of the relationship between tuberculation, carrying capacity and pumping costs is given in the Transite Pressure Pipe brochure, TR-11A. A copy of this book will be sent on request. Johns-Manville, 22 East 40th Street, New York, N. Y.**

# Johns-Manville TRANSITE PIPE

## For efficient, economical water and sewer lines

# Cold or Hot Plant Mixes?

(*Continued from page 68*)

In considering these claims, one must not lose sight of the fact that the durability of an asphalt pavement is assisted by designing *dense graded* mixtures so that they will contain the highest possible percentage of the asphalt cement of the quality specified without unduly sacrificing stability under the hottest weather and under the heaviest traffic that the pavement will be subjected to; further, that resistance to cracking is improved by the use of as soft an asphalt cement as possible without unduly lowering the stability or reducing the maximum practical percentage of asphalt. There seems to be no practical reason why a softer asphalt cement cannot be used in the dense graded hot asphalt mixtures than is ordinarily used in such mixtures, and such as is used in similar mixtures for the cold laid pavements, if one accepts the "thinner" film theory, provided that the asphalt cement in the hot mixtures can be uniformly distributed and all aggregate thoroughly coated. The steam dispersion method is being used, we understand, for adding the asphalt cement and solvent to produce a superior N. Y. State Type III mixture, as well as to add the asphalt cement with or without the oil or flux to other types of dense graded asphalt plant mixtures, resulting, so it is claimed, in greater uniformity in distribution of the asphalt content in these mixtures.

## Stock Piling

The cold plant mixtures no doubt do have several advantages over the hot mixes at the plant. The principal advantage of the cold laid types of mixture seems to be that they can be stock piled either in summer or in winter, preferably outside open to the weather unless stored in a building with some heating facilities, for as long as four to six months before use. This feature of the cold mix permits a mixing plant to operate for a longer period of time and to stock the excess mixture until it can be placed in the pavement, whereas with a hot mix the progress on the pavement is largely dependent on the capacity of the plant to turn out and deliver at once the hot mixture. The production of the cold mixture also makes it possible for the plant to operate more uniformly or continuously, the excess material being either stocked for maintenance work after the plant is shut down for the season or stocked for construction work when not needed for any reason at the pavement site.

Generally, the capacity of a hot mix plant is much reduced by wet or cold materials. Owing to the lower temperatures required for cold laid mixtures, the condition of the material is not so important. When paving mixtures can be stock piled readily, small orders of top or binder mixture may be filled easily and quickly without the necessity of large temperature changes, dumping of hot bins of aggregates or changing the size of the screens, as is necessary with hot mixture plants.

## Plant Costs Higher

On the other hand, the operation and design of the plants for cold laid mixtures is usually somewhat complicated by the use of additional special equipment and by additional materials such as special asphalts, fluxes or solvents, and the need of material driers and means of cooling the material before mixing. Consequently, the cold mix plants are apt to be somewhat more expensive than hot mix plants, and the cost per ton at the plant of the cold mixtures is generally somewhat higher than the hot mixture owing to this greater investment, higher cost of materials, and a royalty or service charge which must usually be paid by the cold mix manufacturers. Such charges, when paid, should cover some expert supervision of the plant operation and laboratory testing of materials and finished product.

## Other Advantages

Admitting that the good proprietary cold mixes are generally more expensive at the plant, this extra cost may be compensated for by the lower laying cost and saving of material on the street, and in many cases by the value of the expert supervision and testing of the proprietary mixtures, which is often not given, outside of the larger cities, in the case of non-proprietary or hot laid mixtures.

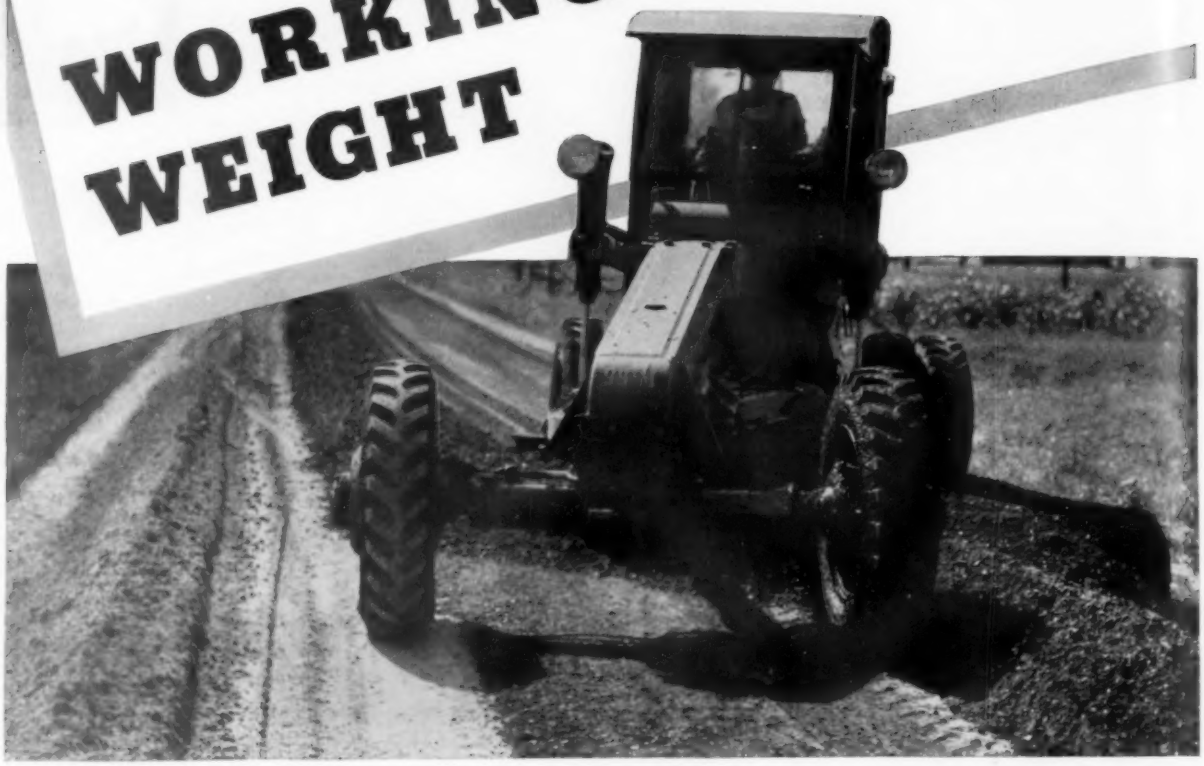
There is little argument but that the cold laid mixtures have real advantages over the hot laid mixtures in the matter of transportation, as the matter of temperature loss or chilling due to air cooling or rain is not so important. No cold-laid mixtures would be rejected because of a delay, as is apt to be the case in the transportation of the hot mixtures. The practicability of shipping the cold mixture by car-load lots or by trucks for great distances is a true advantage.

## Laying

In the laying of mixtures in the pavements there is much to be said in favor of the cold laid types over the hot laid types. The ability to stock pile on the job or to spread without immediately rolling, are real advantages, particularly with WPA labor, where over-time may be impractical. It is much easier to make proper transverse and longitudinal joints in the wearing surface or binder course, using the cold mixtures without waste due to cutting back the edges, as is usually desirable in case of the hot type of mixtures. It is relatively easy with the cold laid mixtures to make such joints invisible or to correct low spots in the surface, even after initial rolling and before traffic has compacted the pavement, by fluffing or raking the surface, adding new material and re-compressing. Consequently, less highly skilled rakers and roller operators can be used with the cold laid mixtures with the same ultimate smooth-riding qualities of the pavement and avoidance of segregation or lack of uniformity which may result in depression under traffic. Since the cold laid mixture can be handled on the street more easily as a rule,

*More*

# WORKING WEIGHT



## MAKES THE "99-M" POWER GRADER A STAND-OUT ON OIL MIX

● Extra working weight, resulting from All-Wheel Drive, makes the "99-M" the HEAVIEST motor grader on the market . . . from a performance standpoint. This extra working weight makes its time and money-saving ability quickly felt on municipal oil mix jobs. Because the blade is *between* traction wheels instead of *in front* of them, a "99-M" holds the line of travel against the side-thrust of the heaviest windrow. This makes it possible to move larger windrows faster and farther . . . with all wheels missing the windrow. Savings on power cost are substantial because live pulling power on front wheels eliminates the drag on engine power caused by 3 to 4 tons of front end *dead* weight.

A motor grader without power on the front wheels is like a draft horse with roller skates on his front feet.

*The new monorail frame adds extra frame rigidity and greater blade visibility to the "99-M's" other basic advantages.*

A demonstration will prove the outstanding value of the "99-M's" greater working ability on all oil mix and other municipal motor grader jobs . . . will convince you that to have real *power grader* efficiency and economy you must have All-Wheel Drive and Steer.

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Shovels and Cranes

**Austin-Western**

and with less interference from the rollers, it is claimed that it requires fewer men per ton in laying than the hot mixture.

Cold mixtures work well in asphalt spreading or finishing machines—as well as if not better than the hot mixture. Unlike hot mixtures, the hair checking or crazing in the wearing surface of a cold laid pavement will heal or bond under rolling or traffic, and some contend that some moisture will not harm the closing of the cold laid mixtures in case of rain, particularly as the cold laid mixtures can be further rolled or closed by traffic, long after the time of spreading and initial rolling, and provided the aggregate used in the mixture is hydrophobic or has a greater affinity for asphalt than for water, and provided proper densities can be obtained by subsequent rolling or traffic. At least from our observations it would seem that the hot laid type of mixture can be more successfully laid in cold weather than the cold laid types.

The sealing of the gutter at the curb with hot asphalt cement and a smoothing iron is just as important with the cold mixtures as with the hot mixtures to prevent the entrance of moisture, dirt and vegetable growth, but must be done when using cold laid mixtures, only after the curing or fluxing period and rolling has been completed. Ordinarily, traffic should be blocked off a cold laid pavement and rolling continued longer than with the hot laid type to permit proper curing and compression.

Fine cold mixtures are sometimes used as surface void fillers or finish to seal either hot or cold laid pavements and can be used for this purpose more easily and successfully than a hot mixture.

ACKNOWLEDGMENT.—From a paper presented at the Thirteenth National Asphalt Conference, Dallas, Texas.

**The Municipal Index—1941-42**

**See Section 3 of the new volume of this yearbook for important material on: the control of surface cracks by improved base design; the new municipal asphalt plant in St. Louis, which is paying for itself in savings; and the use of brick in city paving.**

**Address The Municipal Index, 470 Fourth Avenue, New York.**

# Procedure for Conversion of Large One-Family Houses

AS a practical method of meeting the increasing demand for conversion of large one-family dwellings into multiple use, a committee of the New York State Federation of Official Planning Boards offers the following suggestion:

That in adopting a new (or a revised) zoning ordinance, the city council, village or town board might provide additional regulations authorizing the building inspector or other officer to issue permits for alterations to such large one-family residences so as to adapt them to limited multiple-family use providing certain basic conditions were met. These would include:

1. No change in present use district zoning. The area to remain in the one-family zone. The variance in each particular case to cease when the structure is removed.

2. That a minimum floor space per family unit be required.

3. That the family density requirement under comparable conditions in the multiple-family use districts must not be exceeded.

4. That off-street parking must be provided.

5. That each apartment must be a complete housekeeping unit.

6. That no exterior structural changes except necessary entrances may be made.

7. That no additions or appurtenances be added except provisions for the housing of one motor vehicle per family unit.

8. And others as may be indicated.

The adoption of such a program should provide for the profitable use of such structures during the transition period and for the amortization of indebtedness against them. At the completion of their useful economic life it would then be practical for owners to remove the structures and replat the lots in conformity with area requirements for one-family units of modern construction.

—From *New York State Planning News* for June 27, 1941.

# Land Tenure in Boulder City

TO the Editor of THE AMERICAN CITY:

Excellent as is the article, in your July issue, on "Construction Town Proves Value of Far-Sighted Planning," Mr. Bashore has not given adequate emphasis, I believe, to the primary reason for the unexpected success of Boulder City as a thriving community.

In drafting the law which set the land-tenure policy of Boulder City, Dr. Elwood Mead, then Commissioner of the U. S. Bureau of Reclamation, included a provision prohibiting the private ownership of any lots in the city, so that the rental value of the sites would all accrue to the community rather than to any real estate speculators. Dr. Mead had been engaged by the Government of Australia to advise them with regard to a new Capital City, that has since come into being, and is now Canberra, and where the same policy of leasing but not selling any land prevails.

The experience with this policy in Boulder City has been such that any attempt to abandon it would meet with strenuous opposition from those who have built and own the homes and many of the fine store, hotel and business buildings in this city. The fact that homeseekers may enjoy possession of a lot, with security of tenure, and are required to pay nothing as purchase price for the lot, but only a nominal monthly rental, according to the location of the lot selected, has acted as a stimulant which accounts in no small measure for the substantial and solid growth of this attractive little city, which was fully expected to all but die, once the Boulder Dam was built and the workmen employed on that job had moved away.

In 1941 Congress authorized the renewal and extension of all original leases, and the continuation of authority for the city to lease its remaining lots, but without authority to part with the title to any land in Boulder City.

The fact that a "lot" in this city costs nothing to "buy," plus the fact that Nevada has no sales income or inheritance taxes, no doubt also accounts in no small measure for the orderly growth and prosperous appearance of Boulder City, Nev.

J. RUPERT MASON.
San Francisco, Calif.

•

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# BAKER SNOW PLOWS

# Industrial Diversification and Small Cities

*By* HERBERT S. SWAN
Industrial Consultant, New York

IF THE small city is to share more largely in the industrial growth of the country than it has in the past, it must devote more study to the subject of industrial diversification. Statistics show a slight trend of heavy industry away from the larger toward the smaller cities, but they also show that the light industries which employ by far the greater number of workers, and which are the most rapidly growing industries, hug the centers of the larger cities pretty closely. Judged by number of employees, a distinct tendency toward greater and greater concentration of industry in the larger cities is still observable.

In attempting to effect a diversification of industry, it would be well for each community to define what that term involves in its particular case. A large number of factories does not, as such, regardless of other considerations, constitute diversification; they may all be in the same general line of activity and subject to the same seasonal or trade influences. Even a large number of establishments in different industries, though diversified over a comparatively broad range of manufacture, will not necessarily afford desired balance and stability to the industrial structure of a community.

A community specializing in the production of capital goods exclusively, will in depressions, as a rule, experience a more severe drop in employment and payrolls than a community confining its attention solely to the manufacture of consumers' goods, assuming such merchandise to consist of staple articles. A city in which the industries utilize only unskilled labor will always experience a lower level than one employing highly skilled labor. What constitutes desirable diversification differs in each locality according to its own particular location with reference to the fundamental factors in production, such as markets, raw materials, transportation, and labor. But each community might well devote more attention than it has in the past, not to mere diversification, but to desirable types of diversification considering its needs and circumstances.

### Factors Favoring the Small City

Continuity of production throughout the year is usually more of a problem to the manufacturer in the small city than in the large city, for manufacturers in the latter can, because of the large reserves of local workers available for employment, adjust production schedules to meet seasonal fluctuations in the trade. Manufacturers in small cities must, however, afford employees more stable employment throughout the year in order to have sufficient workers at peak seasons. The small city is therefore more limited than the large city in its appeal to seasonal industries. Yet many seasonal industries now located in large cities might upon a re-examination of their situation find that a more evenly regulated production schedule in some small city would possess substantial attractions to them. True, such a location might through a portion of the year necessitate manufacture for stock. But this objection would in certain instances be more than counterbalanced by savings effected in overhead demanded on the larger plant required to meet widely fluctuating orders for immediate delivery, the higher prices paid for materials in busy seasons, the use of inefficient help and the payment of overtime rates in rush seasons, and the steady drain of higher fixed charges—interest, depreciation, taxes and maintenance—on the excess machinery required by a plant set up to produce goods currently for hand-to-mouth buyers.

The automobile, the motor truck, the state highway, the long-distance telephone, the high-tension super-power line, the radio, and the airplane, have all had, and are now having, the effect of strengthening the competitive position of the small city as against the large city. These inventions, if properly utilized, may in large measure overcome such advantages as the large city has heretofore possessed in the way of greater railway facilities, markets, and labor supply. But if these developments are not properly controlled, who knows but that they may be made a means of a still greater concentration of population in large cities. If the small city does not itself exploit such advantages as it may possess, it is quite certain that it will continue to lose both industry and population to the large metropolitan centers.

# The Snow-Removal Budget

(*Continued from page 77*)

only a nominal amount—$1,000 only in 1941—specifically for snow removal. Some cities appropriate much more; some appropriate nothing. For example, New York allocated $2,500,000 for the 1940-41 season. Detroit usually appropriates $50,000, and Trenton customarily provides about $15,000. Baltimore employs no extra help and makes no appropriation. Detroit keeps $25,000 in cash on hand to pay extra workers.

### Costs Which Mean Nothing

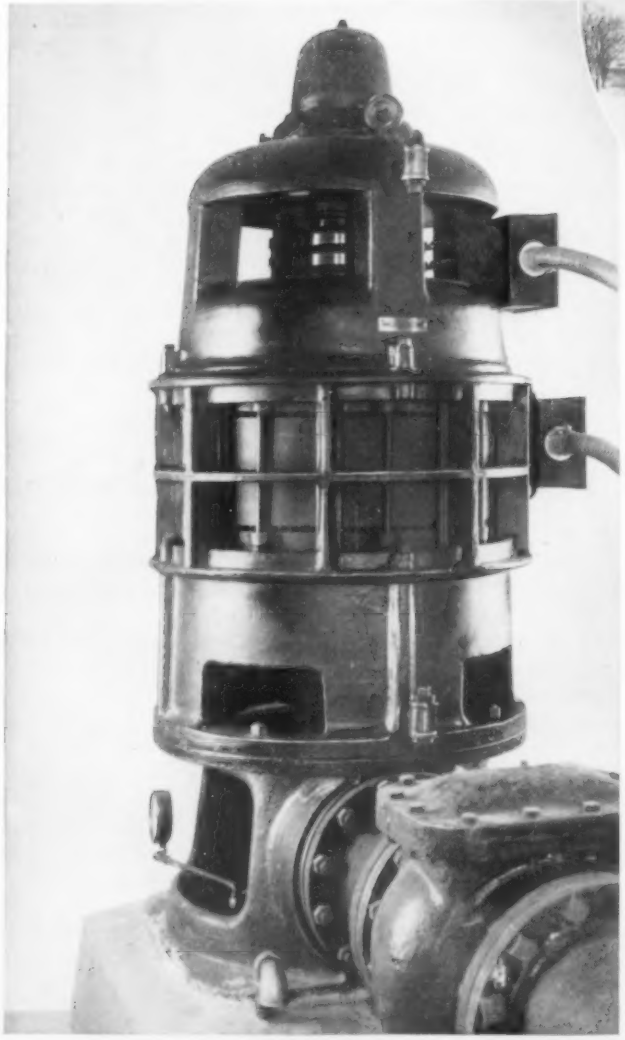
The figures which are given for various inches of snowfall and costs in different cities do not give a true comparative picture of conditions, for several reasons: the distance which snow must be hauled for disposal, the latitude of the city, which may permit the city to leave snow on the streets for a longer period to permit the sun to melt it; and the fact that a late snowfall is usually melted by the sun before the equipment can remove it.

With these statements in mind, we record the expenditures for a number of cities as given by the Philadelphia Bureau of Municipal Research. For 24.1 inches of snow in 1940, Philadelphia spent $79,937.47, whereas New York spent $1,423,787 for 22.2 inches of snow in the winter of 1939-40. In other recent years the expenditures and snowfalls in Philadelphia were as follows: 1937, $22,347.98 for the removal of 12.3 inches; 1938, $71,810.59 for the removal of 20.0 inches; 1939, $107,885.18 for the removal of 18.8 inches.

New York has spent over $7,227,600 in one season, the winter of 1933-34, when 48.0 inches of snow fell. Detroit spent $198,953 in 1939 for 40.1 inches of snow; Rochester, N. Y., spent $210,520 in 1938; and Pittsburgh spent $53,311.32 in 1939.

# ROCHESTER, MINNESOTA CHOOSES FAIRBANKS-MORSE PUMPS *Repeatedly*

PUMPING STATION AT ROCHESTER, MINNESOTA



WHEN a municipality chooses Fairbanks-Morse Pumps for three successive water system expansions, as Rochester, Minn. has done, it is significant.

It means that F-M Pumps equal or exceed pre-sale claims as to capacity and operating economy. It means, too, that F-M Pumps *retain* their efficiency and dependability through years of service.

Rochester's three F-M Pumps are all of the turbine type: a 12-inch with 50-hp. motor, a 10-inch with 15-hp. motor, and the 12-inch pump pictured here. They were bought in 1934, 1935, and 1937, respectively; there was ample time between purchases for trial by use.

Whether *your* city's pumping problem is concerned with water supply or with sewage, there are pumps in the complete F-M line that will serve you efficiently and economically. For capable co-operation on *any* pumping problem, write Fairbanks, Morse & Co., Dept. I-10, 600 S. Michigan Ave., Chicago, Ill. Branches and service stations throughout the United States and Canada.

*Rochester's* third *Fairbanks-Morse Turbine Pump—a 12-inch, 15-stage pump which at 1150 r.p.m. delivers 800 g.p.m. against a 275-foot head. It is driven by a 75-hp. F-M Motor.*

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MOTORS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS

# New Steel Filtration Plant

*(Continued from page 64)*

The piping and valves in the plant are so arranged that any combination of Aer-O-Mix mixers and settling basins may be used, shifting from one side of the plant to the other and back. The two separate settling basins are uncovered and completely surround the circular filtration plant.

## Filtration

The plant is at present equipped with five filters rated at 2 mgd each. The paddle-mix basins may be converted into filters at a later date if added capacity is required. Each filter has 18 inches of gravel and 24 inches of sand, supported by perforated plates 6 feet above the bottom of the filter. The perforations in the plates are 11/16-inch diameter, and each hole is covered with a dished washer to prevent displacement of the large gravel. Each filter has four radial wash-water troughs, two of which are located under radiating bridges from the central control gallery; and each filter has three circumferential wash-water troughs. These are all built of steel. Each filter has a Norwood hydraulic control table for the various valves necessary for its operation, and a Builders Iron Foundry indicating loss-of-head and rate-of-flow gage as well as recording gages for the same measurements.

Two 500-gpm F-M centrifugal wash-water pumps are located in the pipe gallery, delivering filtered water to a two-section wash-water tank of 100,000 gallons capacity mounted on the turret roof.

## Personnel

The new Morse filtration plant at New Britain was designed and erected under the direction of James A. Newlands, consulting engineer, Hartford, Conn. The plant was placed in operation on August 15, 1940, by Mr. Newlands and is still operating under his supervision.

The filtration plant was erected by the Chicago Bridge & Iron Co., with Norwood Engineering Co. as subcontractor on the piping and other installation work, the head house by the Hayes Construction Co., of New Britain, Conn,. the clear-water tanks by the Bethlehem Steel Co. Preliminary excavation was carried out by Joseph Battaglia & Sons, New Britain.

The Engineering Department of the Board of Water Commissioners designed and supervised the construction of the pumping station. Joseph W. Holden is Chief Engineer of the New Britain Water Department, and George W. Woods, the assistant to the Chief Engineer. The pumping station was erected by the Intercounty Construction Co. and the equipment furnished and installed by Fairbanks, Morse & Co. Other contracts consisting of laying piping were let to the Intercounty Construction Co. and Antonio Lambo.

This city improvement was a PWA project and was authorized by the Board of Water Commissioners, M. W. Bannan, Chairman.

# Underground Booster Stations Feature Dual Water System

*(Continued from page 47)*

## Emergency Service

"Car 55, call the shop; Car 55, call the shop; WPD" coming in over the Philco police radio installed in the shiny Ford coupé driven by Harry W. Dotten, Superintendent of the Water and Sewer Department of Winchester, causes him to get to the nearest telephone and call his shop in the center of town. The foreman's car and the watershed patrolman's car are similarly equipped with one-way radio. Consideration is being given to installing the same two-way radios in the Water Department cars as are now installed in the police cars, but it is felt that the expense is not warranted unless a condition of unusual national emergency is apparent.

The police radio is a cooperative installation of Winchester and several adjacent towns, and it handles the police and emergency calls of all the associated communities as well as reporting all fire alarms. An employee of the Water and Sewer Department is sent to all fires to represent the Department. The Fire Department consists of some regular men and some call men. The Water Department wishes to make sure that the hydrants are properly operated by the call firemen. The Water Department man is also a special police officer and helps handle traffic near fires.

Night emergencies are dealt with in a novel but practical manner in Winchester. The emergency telephone number is Winchester 1831-W, a party line which rings the bells on four extensions located one each at the superintendent's home, in the homes of the two foremen of the emergency crew, and at the Water Department shop. The first man in this group to answer the call is responsible for carrying through the conversation, and getting all the required information, while the others listen and come in if necessary. An arrangement is made with the two foremen to insure that someone will be ready to receive an emergency call every night. These two men are paid for five hours extra work each week to stay at home on alternate nights to be ready to receive emergency calls. Actual time really spent on night emergency work is paid for at double time.

The Water and Sewer Board of Winchester is composed of three civic-minded men, all of whom have served the Board for a considerable period of time. The Board consists of E. C. Sanderson, Chairman, 25 years; Clarence P. Whorf, 17 years; and Elwell R. Butterworth, 7 years. The Department has had only two superintendents since it was created in 1873. The father of the present Superintendent, William T. Dotten, served 50 years. Harry W. Dotten, now Superintendent, succeeded his father in 1925 and has to his credit 36 years of service in the Department.

Lithographed on stone by Edward A. Wilson

The arteries of a community are its underground conduits — pipe lines transporting water, gas, sewage, power. Of primary importance are water mains for without water humanity could not exist for a week. It is significant that more than 98 per cent of the water distribution mains of America's 15 largest cities are cast iron mains. It means that, for generations, tne best engineering minds have continued to specify cast iron pipe for underground mains.

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# Bureau of Urban Research Inaugurated by Princeton University

RECENTLY announced by Princeton University is the inauguration of a new Bureau of Urban Research. Its major purposes will be (1) to provide a mechanism for the coordination and integration of information and research in fields pertaining to cities; and (2) to contribute, through creative research, to the development of a greater knowledge of the relationships between the different activities which together form the city and to a further understanding of urban structure.

## Functions and Location

Of the six functions here listed, the first three are being undertaken at the start, and the last three are planned as future activities.

1. The development of a special analytic *Reference* to documents concerning urban problems and their interactions, and a limited collection of actual research material.

2. *Creative research,* designed to discover more of the underlying structural interrelationships and form of cities and to stimulate such research elsewhere. Results will be published.

3. A *clearing house* of urban information and research for those concerned with city problems, making available bibliographies and leads for research and for the solution of practical problems.

4. *Conferences*—opportunities for the interchange of knowledge and comprehensive discussion of the maladjustments of cities and their solution.

5. *Advisory assistance* to governmental officers and agencies, on request, without charge or commitment.

6. *Instruction*—not in a formal sense, but by aid and advice to advanced students at Princeton and elsewhere.

Princeton, N. J., is located in a natural laboratory for urban research. In addition to New York and Philadelphia, first and third largest cities in the nation, there are within 50 miles of Princeton 6 cities of more than 100,0000 population; 24 cities of from 25,000 to 100,000, and 37 cities of from 10,000 to 25,000, as well as two of the most densely populated suburban areas and the first and fourth largest industrial areas in the United States.

## Statement by the Director

In a statement prepared for readers of THE AMERICAN CITY, the Bureau's Director, Melville C. Branch, Jr., writes:

The project has been under consideration for several years, with a constantly increasing conviction that the time has come for a more thoughtful consideration of the difficulties presented by serious urban problems. The approach which has characterized most attempts at solution to date has almost invariably been frustrated as to ultimate success by lack of integration of the many varied factors involved. There is great demand for urban research which as yet does not exist. Data on the problem are available or can be procured, but no agency exists for their collection, organization and analysis. The subject needs the deliberate investigation inherent in the process of university research, and the cooperation of trained scholars and practicing experts in the many fields involved. These men should be pooling their information and experience toward the creation of a common body of information, which, when finally organized and analyzed, will provide to some extent the answers to the manifold complexities which haunt and bar the path of urban improvement.

A bureau of this sort in a university was one of the recommendations made by the committee appointed by the National Resources Committee of the Federal Government to investigate urban problems, whose report entitled "Our Cities, Their Role in the National Economy" was published in 1937.

The Bureau will begin work as a small unit. A modest beginning, gathering momentum and direction as it progresses, is advisable when the problem to be studied is both difficult and complex. The organization will expand with the accumulation of data and case studies, the employment or assignment of additional research associates, the progress of the research, and the publication of results. The Bureau, as initially set up, is designed to serve as a "lens" through which the problems, information, techniques, and guidance, gathered from the departments of the University represented in the Faculty Committee on Urban Research and from the fields of actual practice represented by the Advisory Committee on Urban Research, can be collected, analyzed, distributed for study, or made available to the Bureau.

The work of the Bureau of Urban Research will have significance not only in connection with the normal improvement of urban places, but also with relation to the present emergency. Our cities, with more than one-half of our people and most of our productive facilities, are vital to national efficiency, which modern warfare has revealed as the keystone of national defense. In contributing to the development of a background for the solution of urban maladjustments and the most effective amalgamation of defense activities within cities, the Bureau will be concerned with the very foundations of military security.

The hour will come when our greatest needs will be those of readjustment to a more peaceful world and a more normal economy. Greater knowledge of cities will greatly facilitate this work and pave the way for urban rearrangements of enduring value. The improvement and reconstruction of cities will play a foremost role in the extensive public works programs which must follow the end of war. The problem is not whether constructive research, such as the Bureau will undertake, can be achieved, but whether this will be done in time.

**EDITOR'S NOTE:** ***It is suggested to the readers of THE AMERICAN CITY and to all interested in urban matters, that any material useful to the work of the Bureau of Urban Research be forwarded to that organization. The Bureau is particularly interested in documentation of the relationship between different types of urban activity, such as that between traffic congestion and municipal budgetary expenditures, or the ribbon development of stores and highway accidents, etc.***

## Executive, Faculty and Advisory Committees

The Executive Committee is composed of Prof. J. Douglas Brown, Professor of Economics and Director of the Section on Industrial Relations, Prof. Jean Labatut of the School of Architecture, and George A. Brakeley, Financial Vice-President of Princeton University.

The membership of the Faculty Committee will be appointed in the fall by the President of the University.

At the present time, the Advisory Committee consists of:

Walter Curt Behrendt, Director of the Buffalo City Planning Association, Buffalo, N. Y.

Jay Downer, Parkways and Highways Engineer, New York City.

Charles W. Eliot, Director of the National Resources Planning Board, Washington, D. C.

Arthur C. Holden, Architect; Chairman, Land Utilization Committee of the New York City Building Congress, New York City.

Lewis Mumford, Urbanist and Author, Amenia, N. Y.

Alfred Rheinstein, Building Engineer; formerly Chairman of the New York City Housing Authority, New York City.

W. W. Riefler, Professor of Economics at the Institute for Advanced Study, Princeton, N. J.

Stephen F. Voorhees, Architect; formerly Chairman of the New York World's Fair Board of Design; member of the Housing Committee of the Advisory Commission to the Council of National Defense, New York City.

The Director of the Bureau, Melville C. Branch, Jr., was formerly a staff member of the National Resources Planning Board.

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# PERMUTIT

**WATER CONDITIONING HEADQUARTERS**

# Public Work Reserve

(*Continued from page 49*)

## To Maintain $30,000,000,000 of Added National Income

In his talk at the conference mentioned on page 49, Jacob Baker expressed his agreement with other planners and economists who believe that the 110-billion-dollar national income which the United States seems likely to attain during the national defense emergency can be maintained permanently, instead of reverting to the previous maximum of some 80 billions. To achieve this goal, Mr. Baker suggested, as a rough estimate, the possibility of apportioning the added 30 billion dollars of productive capacity as follows:

10 billions for national defense requirements;

10 to 12 billions to be divided among non-governmental expenditures for reconstruction of war-time industry for peace-time needs; improvements in transportation systems—railroads, buses, etc.; and the redevelopment of slums and blighted areas;

8 to 10 billion dollars for miscellaneous public works and services, national, state and local. In this category such problems as soil conservation, water supplies, sewage collection and disposal, hospitals, schools, traffic and transportation facilities, recreational and educational facilities, hospital and home aids, proper coding and classification of local government records, are typical, but represent only a few examples of the broad field where needs exist.

## Demonstration Projects

Procedures for planning, programming and budgeting municipal public works needs and expenditures have been tested and approved by a number of cities in which effective demonstration projects have been completed under the direction of the Public Works Committee of the National Resources Planning Board in conjunction with municipal officials.

The cities in which demonstration projects were set up and new programming methods adopted were: Winchester, Mass.; Nashville, Tenn.; Kalamazoo, Mich.; Dallas, Texas; Fargo, N. Dak.; Sacramento, Calif.; and Spokane, Wash. Each of these demonstration projects culminated in the publication and adoption by municipal officials of long-range programs of local improvements.

Describing the methods employed in formulating such a program, the report says in part:

> A list of the improvements needed in the community during the next five or six years, arranged in some order of preference, is compiled. The financial resources and commitments of the municipality are analyzed to determine the funds which will probably be available, or which can be provided safely, for the construction of public improvements during the period indicated. Those projects which are tentatively selected for construction are then scheduled over these years, in the order of their relative desirability, and in direct relation to the funds indicated to be available for the purpose. The first year of the schedule is then recommended as a capital budget for the ensuing year and is given legislative consideration, the balance of the schedule constituting the probable future requirements.
>
> 'At the end of the first and subsequent years, the program is reviewed. New projects which appear to be needed are added to the lists. Projects no longer appearing to be justified are eliminated; others may be shifted in position in the schedule in accordance with changed needs, or for other reasons. An additional year is added to replace the year just completed, and the revised list of projects is again scheduled over the full period of the program. The schedule for the first year of the newly revised program is then recommended as the capital budget for the coming year."

## State and Regional Directors

The following list gives the names of the state directors of the Public Work Reserve as appointed up to August 23, and their addresses if then available:

Alabama—George C. Scott

Arizona and Southern California—Albert Bateman

Arkansas—Edward D. Dudley, Union Life Bldg., Little Rock, Ark.

Northern California and Nevada—

Colorado and Wyoming—Douglas Platt

Connecticut and Rhode Island—James McElroy, Hartford, Conn.

Florida—A. J. Little, 314 West Monroe St., Jacksonville, Fla.

Georgia—John L. Peters, Ten Forsyth Street Bldg., Atlanta, Ga.

Idaho—Edward P. Horsfall

Illinois—Ross Caldwell, Merchandise Mart Bldg., Chicago, Ill.

Indiana—Virgil M. Simmons, 429 N. Pennsylvania St., Indianapolis, Ind.

Iowa—Donald Tormey

Kansas—Lawrence F. Whearty, Federal Bldg., Topeka, Kans.

Kentucky—Robert Coleman

Louisiana—A. J. Negrotto, Canal Bank Bldg., New Orleans, La.

Maine, New Hampshire and Vermont—James D. Cash, Manchester, N. H.

Maryland, District of Columbia and Delaware—E. L. Gonyou, Baltimore, Md.

Massachusetts—William Drummey

Michigan—Floyd S. Benjamin, 1331 S. Washington Ave., Lansing, Mich.

Minnesota—Addison H. Douglass, City Hall and County Court-House, St. Paul, Minn.

Mississippi—Isaac S. Reed

Missouri—Howard C. Williams, 1136 E. 66th St., Kansas City, Mo.

Montana—Martin Kelly

Nebraska—Lloyd A. Woodward, 3634 Garfield, Lincoln, Nebr.

New Jersey—Joseph J. O'Loughlin

New Mexico—Richard Gardner

New York State—Alfred E. Roche

New York City—

North Carolina—James L. Hales

North Dakota—Lee O. Hughes, State WPA Office, Bismarck, N. Dak.

Ohio—Frank L. Ritter, 8 E. Chestnut St., Columbus, Ohio

Oklahoma—

Oregon—Wallis W. Bartlett

Pennsylvania—E. K. Hunter, Board of Education Bldg., Parkway and 21st St., Philadelphia, Pa.

South Carolina—Torrence G. Hanner

South Dakota—John G. Dorsey

Tennessee—M. U. Snoderly

Texas—John C. Douglass

Utah—T. H. Humphreys

Virginia—Thomas H. Greene, 9th and Broad Sts., Lyric Bldg., Richmond, Va.

Washington—John T. Burdett

West Virginia—S. Grover Smith

Wisconsin—Leo J. Voell, Federal Bldg., Milwaukee, Wis.

The four regional offices of PWR and the field representatives who will operate from them are:

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*Southern Region*—J. Banks Hudson, Canal Bank Bldg., New Orleans, La.

*Eastern Region*—Fred S. Childs, 265 W. 14th St., New York City.

*Western Region*—Robert Mead, Monadnock Bldg., 681 Market St., San Francisco, Calif.

# "Repair for Defense"

A "REPAIR for Defense" campaign is being carried forward this fall in all defense areas by the building and allied industries with the cooperation of lending institutions and the Federal Housing Administration. The following statement has been prepared especially by FHA for THE AMERICAN CITY's readers:

The specific aim of the drive is to make immediately available to defense workers additional housing facilities through the repair or remodeling of dwellings, particularly the conversion of large old houses into multi-family units or modern lodging houses.

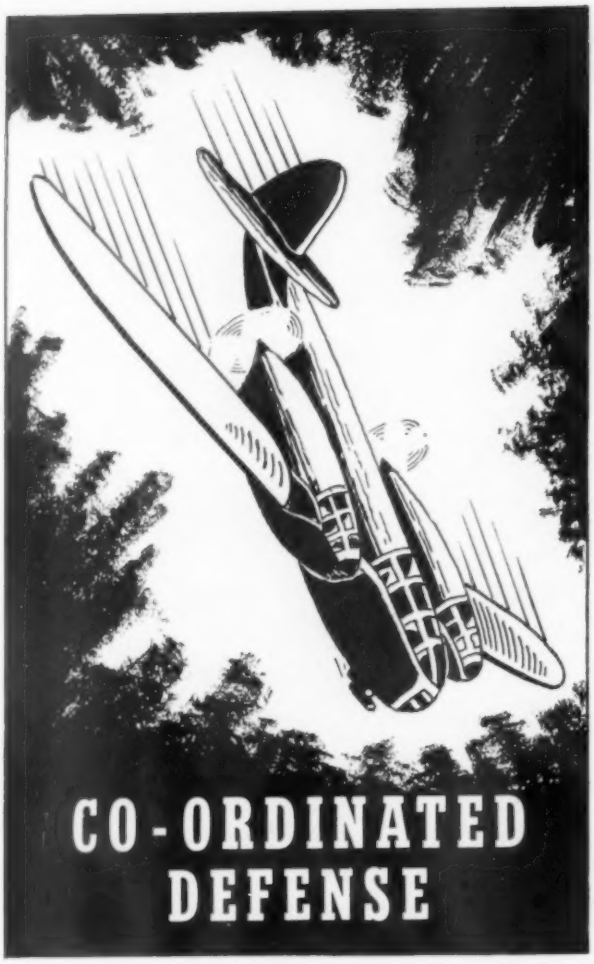
While it is sadly true that neighborhoods sometimes go to pieces or become obsolete more quickly than the houses in them, yet it is also true that property values and neighborhood morale can be restored in many instances by an intelligent program of property rehabilitation.

It is distinctly to the advantage of municipal agencies and civic bodies concerned with city planning, property maintenance, neighborhood morale, and public health to aid the building and allied industries in the "Repair for Defense" campaign.

Exactly what is this campaign?

It is simply a cooperative movement of manufacturers, builders, contractors, and dealers in all the industries connected with building, of financial institutions which lend money for property repairs, additions, alterations, and other improvements, and of the Federal Housing Administration which insures the lenders against loss on such loans under provisions of Title I of the National Housing Act. FHA insurance makes it possible for these funds to be advanced at relatively low rates on the personal notes of the borrowers, at the discretion of the lending institutions. The notes are repaid in monthly installments over a period of time agreed upon by borrower and lender, within the limits of the FHA regulations.

In view of the Government's efforts to limit unnecessary installment buying, the campaign will be aimed at encouraging necessary work, chiefly for repair or remodeling of houses in defense areas where there is an urgent housing demand.



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# Traffic Control and Facilitation

**Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York**

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## The Problem of Parking Facilities*

DURING the early road-building era, efforts to provide highway transportation service were directed exclusively to the vehicle in motion on the assumption that the vehicle at rest could take care of itself. This assumption at one time was generally valid, for parking at the curb furnished adequate terminal facilities for the motor vehicle, as it had for the horse. Today, however, the growth and concentration of motor-vehicle ownership and use have reduced curb space to relative insignificance in relation to the demand for parking accommodations in downtown areas, leading to the necessity of furnishing this service off-the street.

Elaborate surveys conducted in many cities already seem to have proved that further street parking is a mathematical impossibility. Yet the counting and recounting of potential parkers and available parking accommodations have generally led to only superficial recommendations affording little relief, with the result that the city and the motorist have accepted their predicament as a matter of course. A recent trip through the United States, for example, revealed that municipal governments have generally done little of real significance to alleviate parking difficulties, and instead have sponsored policies which are a definite hindrance to any sane solution. Municipal interest in some cases seemed to be limited to the apprehension of illegal parkers and the revenue possibilities of parking meters, while in others the inability to cope with parking difficulties has created the attitude that effective measures are no longer possible. Yet in view of the importance of the problem the wonder is not so much how it can be solved as how it has so long escaped solution. In one city, for example, a survey of the downtown area revealed that 93 per cent of all vehicles in the district were parked and only 7 per cent moving on the streets.

It is not a new idea, but an important one, that highway transportation constitutes not merely the movement of vehicles but the function of getting from one place to another. For example, economy is greatly reduced when high terminal fees are added to vehicle operating costs, or when extra distance must be traveled to a parking space; likewise, in terms of total highway transportation cost it is uneconomical to provide storage space on expensive street pavement when such use results in traffic congestion.

Parking is not an isolated issue, but an intimate part of providing fast, cheap, and convenient highway transportation service. Failure of the street itself to provide complete service in terms of adequate parking as well as traffic movement has not altered this fact, but has merely necessitated the dedication of additional facilities off the street. The problem of financing these facilities is therefore closely allied to the whole question of highway finance, just as rail service involves the railroad terminal, or as airports and docks must be furnished in providing transportation by air and water.

*Types of Operation.*—Payment for off-street parking in the central city varies considerably with the methods used to provide facilities, of which there are three general categories: private facilities; privately operated public facilities; and public facilities. Today the second category, the privately operated public facility, which may be either a parking lot or a garage, is providing the major parking capacity in our downtown areas. Payment for these commercial facilities is assessed entirely against the motorist through direct cash charges, except where payments are made by stores to provide their customers a period of free parking. In the case of private accommodations operated in connection with retail stores, hotels, or other business establishments, there is no universal means of exacting payment. In some cases the motorist pays directly for the service, while in others the whole cost may be absorbed by the business establishment or there may be some sharing of responsibility by the vehicle user and the business. Finally, parking may be a municipal operation, with facilities furnished free to the motorist or at low rates made possible through sharing of the bill by property owners or general taxpayers.

*Private vs. Public Operation.*—The problem of how parking should be financed, therefore, leads inevitably to the question of whether operation should be private or whether some degree of municipal action is necessary. Traditionally, American enterprise has been conducted on a private basis, with government performing only those functions which private endeavor has been unable successfully to provide.

*Parking Lots.*—As a result of the rapid increase in privately operated public parking lots during recent years, these facilities are now the most prevalent type of off-street parking accommodations. In the average city contacted by the American Automobile Association for its report on terminal facilities, the parking lot was found to constitute 58 per cent of total off-street parking space and it did 78 per cent of the business. These figures, however, are more an expression of the plight of the motorist than of the popularity of the average parking lot. Over-crowded, over-priced and ill-designed, these unattractive properties resemble more closely the scars of mass bombings than utilities performing a public service. Among the specific charges which have been brought against them are the following:

1. Location of the parking lot is generally dependent upon the location of vacant property.
2. The size of lots is determined by the fortuitous circumstances governing their location.
3. Land for parking is furnished on a temporary speculative basis with the intention of later conversion to more profitable use.
4. The temporary nature of parking lots, many of which are operated on one-year leases, makes improvement of the property uneconomical.
5. The whole cost of parking is charged to the motorist, in spite of the fact that the accrual of benefits to merchants, adjacent property and the city may suggest a more equitable cost allocation.
6. Rates must be charged to cover all costs in connection with the opera-

* Prepared by Wilfred Owen, Department of Finance, Highway Research Board; Thomas H. MacDonald, Chairman. For reprints of this article, write THE AMERICAN CITY, 470 Fourth Avenue, New York.

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tion of the lot, whereas the broad interests involved in the availability of parking facilities suggest that these properties, like the streets themselves, should be operated on a non-commercial basis in terms of profit to the community as a whole.

7. Because of the compulsion to produce an optimum return, parking-lot charges, particularly for short-time parking, are often considered unreasonable, and the desire to operate at capacity often results in irresponsible handling of vehicles, illegal use of surrounding streets, crowding and inconvenience to the motorist.

*Methods of Finance.*—As previous examples have indicated, land used for municipal parking facilities is often already available to the city and does not have to be acquired specifically for that purpose. This was true in most cases studied by the Public Administration Service, which found appropriate sites supplied through tax delinquencies, by gift-taking, by the removal of public buildings, or where remnants had been left from some previous public project. The demolition of public buildings by WPA, or of private dwellings in conjunction with slum clearance projects, offers the city an opportunity to obtain desirable sites for municipal parking facilities. When land is obtained by any of these devices, the problem of financing parking is generally negligible. In many instances, however, the city does not own saitsfactory sites, making it necessary to purchase, condemn or lease. The problem of financing may then be solved in a number of ways, including general obligation or public revenue bonds, special assessments, general fund appropriations of motor-vehicle contributions.

Many city officials have expressed the belief that municipal operation is to be avoided because the city should not compete with private garages and parking lots. Obviously, the city already competes with private business, however, when it permits free parking on the streets, or when parking meters take the stream of the traffic—the short-time parker—away from private off-street facilities. This argument against public ownership, moreover, is hardly important, since the business of parking cars on lots does not involve a long-term investment or a permanent enterprise so that the transition from private operation would create little hardship.

The real issue is simply whether public operation makes possible a better and cheaper service, and judging from the results of private efforts, it appears that such would almost have to be the case.

*Better City Transportation.*—The apparent logic of considering parking facilities an integral part of highway service, hence a public responsibility, does not imply that municipal operation of off-street terminals is the only solution to parking troubles, for the problem might be attacked by reducing the demand for parking space as well as by providing an adequate supply. This approach introduces the possibilities of mass transportation. In spite of the phenomenal growth in motor-vehicle traffic during the past two decades, transit facilities still provide the major transportation capacity in most large cities.

It is possible that, if the equipment and service supplied by these mass transportation facilities were improved, they would be patronized by many who now use their own automobiles. The result of thus attracting a larger percentage of commuters to mass transportation media might be highly salutary to the downtown district, not only because it would lessen the required amount of parking space, but because street capacity would thereby be enhanced. While mass movement has tremendous possibilities in the solution of urban transport problems, including the parking problem, until more emphasis is placed upon the service factor and less on cost the consumer will exercise his right of free choice.

*Municipal Subsidy and Regulation.*—Because of the realization that considerable time may elapse before the city acts to make possible attractive mass transportation and adequate municipal parking facilities, certain interim aids are suggested. Municipal governments might subsidize private operation of parking lots by lowering the assessment of land so used on the theory that parking facilities constitute a public utility. Costs might also be lowered by tax abatement or the elimination of license fees, and the advantage passed on to the motorist by municipal regulation of parking rates. Reduction of parking costs effected by such subsidies would be justified on the grounds that adequate parking at low rates would improve accessibility to the downtown district and thereby bolster surrounding land values. Cities might also bring about an improvement in private efforts by furnishing adequate street approaches to parking lots, by enforcing curb parking ordinances, by leasing public land to private operators, and by exacting strict requirements concerning the appearance of lots, the handling of cars, financial responsibility, and the use of abutting streets.

Among the steps which a municipality might take to provide for better parking conditions in the future are two which suggest immediate action: (1) establishment of an adequate parking plan through intelligent study of the peculiar needs of each individual city; (2) enactment of building codes and zoning ordinances.

# Legal Aspects of Municipal Parking Facilities*

THIS discussion does not purport to be a comprehensive technical dissertation; nor does it attempt to answer all the queries of a legal nature which may arise in any particular community. The varied constitutional and statutory provisions of the several states, the dearth of reported court decisions, and the multiplicity of municipal charters and ordinances, make it impossible without careful study to express any opinion as to what might happen under a given set of circumstances. This article merely intends (1) to show the general laws that some of the states have enacted on this subject; (2) to indicate where those laws may be found; (3) to point out hindrances that several municipalities have encountered in this field; (4) to discuss the "public use" question involved; and (5) to emphasize the need for legislation in many of the states, and for proper preliminary action by local officials, if the solution of the urban traffic problem is to be substantially helped through municipally owned and operated parking facilities.

## 10 States Have Laws Relating to Municipal Parking Facilities

At least 10 states have made some provision in their general laws for public parking undertakings in this field. Seven of these states—California, Indiana, Kansas, Maine, Massachusetts, New Hampshire, and West Virginia—merely authorize their municipalities to establish parking places. The other three—Iowa, Michigan, and Pennsylvania—not only empower municipalities to establish such facilities but also expressly authorize them to collect fees for use thereof.

* Reported by Walter Kurylo, Junior Assistant, Division of Highway Laws and Contracts, Public Roads Administration, Washington, D. C. For reprints of this article, write THE AMERICAN CITY, 470 Fourth Avenue, New York.

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### Lafayette, Ind., Experience Cited

The law in Indiana on this subject has an interesting background. In 1926, the City Council of Lafayette, authorized a bond issue of $52,000 to cover the purchase of land and equipment for a free public parking space for long-time parking. The detailed plan in connection with the parking ground involved a building with sanitary facilities, as well as a free checking room; and the entire parking area was to be encircled by a fence. A custodian was to be placed in charge of the property to serve as an attendant and as a guard against automobile thefts.

The state law at that time did not specifically authorize municipalities to construct or maintain public parking lots. The city secured enactment of a state law which reads as follows:

> In addition to any and all powers conferred by law, any city of this state is hereby authorized and empowered to acquire, establish, improve, maintain and operate municipal parking grounds for vehicles. Any real estate or personal property, or any interest therein, needed by any city to establish, improve, maintain or operate such municipal parking grounds may be acquired by such city by gift, lease, purchase or condemnation. Funds for purposes of this act may be accepted as a donation, or may be appropriated from the general fund, or may be raised by taxation, or by the issue and sale of the bonds of the municipality, or by any or all of such methods. Bonds may be issued and sold by any such city, as bonds are now issued and sold for the purpose of procuring money to be used in the legitimate exercise of the corporate powers of such city. Any city of the state of Indiana is hereby authorized through its proper officers, from time to time, to make such levies as may be necessary to produce a fund for any or all purposes of this act, including the payment and retirement of any bonds therefor issued and sold, and the payment of the interest thereon, and to collect the same as other taxes are collected.

Although the city of Lafayette had a population of only about 25,000 in 1926, the program undertaken by the local officials at that time clearly indicates the farsightedness with which they acted.

The present Kansas law authorizes the establishment of benefit districts by ordinance and permits establishment of several parking stations in each benefit district. Not less than 75 per cent nor more than 90 per cent of the costs of the parking facilities are assessable to the benefit district in which said facilities are located. Costs of the improvement may be levied and assessed in not to exceed 10 installments, with interest on the amount remaining due and unpaid each year accruing at the rate of not exceeding 5 per cent per annum. Landowners may pay the entire costs chargeable to their property within 30 days after the assessment ordinance is passed.

The governing body of the city is authorized to assess the pro rata cost of the condemnation and the improvement of the facilities against the privately owned property in the benefit district, and to levy the rest of the cost by a general tax on all the property in such city. Suits contesting the action taken by the city must be instituted and the summons served within 30 days from the publication of the ordinance levying the assessment. Municipal bonds may be issued and sold to pay the costs of such improvements. The bonds are payable in 10 equal annual installments and are to bear interest at not to exceed 5 per cent per annum.

The state of Maine has revised certain sections of its general laws to authorize municipal expenditures for public parking places.

The state of Massachusetts has this law:

> A town may at any town meeting appropriate money for the following purposes: for acquiring land for public parking places and maintaining the same.

The state of New Hampshire recently amended its laws to provide for public parking areas.

The provision of the West Virginia law on this subject is as follows:

> A city shall have power: (4) to establish, construct, maintain and operate markets, parks, recreation grounds, municipal camps, and parking lots, and upon the discontinuance thereof to sell and convey the same.

The Iowa law authorizes cities and towns to acquire by purchase, lease, or condemnation, real estate for parking purposes, and to pay the costs thereof either from the general fund or, if general funds are not available, from a parking-lot tax fund which may be raised by taxation at the rate of not to exceed ½-mill in any fiscal year. The city council of any city is empowered to establish, maintain, and collect just and equitable charges for use of the parking lands; and the proceeds are to be used for the acquisition of other lands for the same purposes, while any surplus proceeds may be transferred to the general fund of the city. Authority to sell gasoline, oil, motor-vehicle supplies, or other merchandise is expressly denied. The city may lease the enterprises to individuals or corporations for terms not exceeding 5 years, and under regulations determining the parking fees to be charged, or it may sell its interests in the property in such manner and under such terms as the council shall direct.

The laws of the remaining two states —Michigan and Pennsylvania—authorize municipalities to engage in a large number of revenue-producing enterprises, including parking facilities. This law further provides that municipalities may operate these enterprises on a revenue-producing basis; and that they may issue bonds payable solely, both principal and interest, from the revenues derived.

In actual operation, the Pennsylvania law differs from the one in Michigan. It authorizes any county, city, town, borough, or township, individually or jointly with another municipality, to create by resolution or ordinance an authority for construction of, among other things, parking spaces.

### New Bills

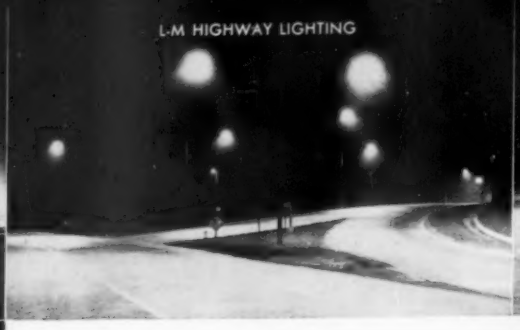
Legislation on this question was introduced this year in Idaho and New Mexico, but failed of enactment. At the time this report was prepared, five bills on this subject were being considered by the Illinois Legislature and one by the Massachusetts Legislature.

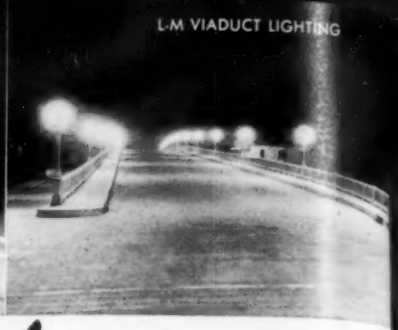
The bills before the Illinois Legislature vary in scope. Senate Bill No. 181 would authorize cities having a population of 150,000 or more, upon approval of the electorate, to establish parking places for motor vehicles within 400 feet of a municipal airport and to finance the same by revenue bonds. House Bill No. 337 would authorize all cities and towns, individually or jointly, to establish parking lots within or without their corporate limits. It also would authorize financing by sale of revenue bonds.

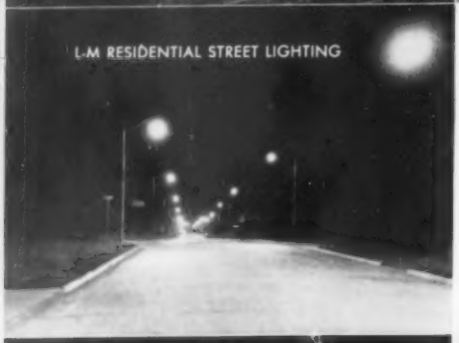
Senate Bill No. 580 would authorize park districts to acquire by gift, lease, or permit, land for use as parking lots, and to place permanent structures thereon. Senate Bill No. 581 would permit any city having a population between 5,000 and 100,000 to expend not to exceed 20 per cent of a special tax fund for leasing, improving, and maintaining tracts of land and town lots as parking lots. House Bill No. 69 would authorize the creation of highway authorities, in counties with a population exceeding 300,000, which would be granted broad powers in the construction and operation of toll highway facilities, including "any facility intended for the accommodation of parking vehicles."

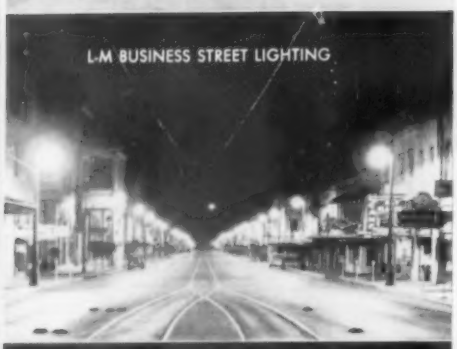
The Massachusetts bill would give the mayor of Boston broad powers for use in solving that municipality's parking problems. It would authorize him to appoint a department, board, commission, or official as an authority empowered to purchase, condemn, or otherwise acquire land for parking facilities; to operate the same, or to license or release them to individuals; to establish the rates to be charged for use of the facilities; to revise the rates whenever necessary so that the lowest possible charge would cover the cost of operation, maintenance, and administration, as well as meet the payment of principal and interest of any

*(Continued on page 101)*



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# Durham Relights for Traffic Safety

*By*

HENRY A. YANCEY
City Manager, Durham, N. C.

DURHAM, seat of Duke University and one of the South's most progressive cities, has provided complete traffic safety lighting for the entire center city area. After careful analysis, the need for a more modern lighting system was recognized and accomplished through arrangements with Durham Public Service Co.

Main Street in Durham is 40 feet wide, with heavy motor and pedestrian traffic. The new lighting system was designed to provide fully adequate night visibility. Existing steel trolley poles carry the modern reflector-refractor luminaires. On the principal business streets an opposite arrangement of luminaires was used for attractiveness and to obtain increased illumination levels. On intersecting streets, similar installations were made, but with a staggered arrangement of luminaires.

The new luminaires on Main Street are suspended from brackets extending 4 feet outward toward the roadway. They are mounted 22 feet above the street and employ an asymmetric light distribution for increased efficiency and effectiveness. The spacing averages 66 feet measured along the street centerline between luminaires. The 10,000-lumen group replacement multiple lamps with General Electric Form 79R luminaires and Holophane refractors provide an average level of nearly 2 footcandles along Main Street. This exceeds substantially the minimum level specified in the "Illuminating Engineering Society's Recommended Practice," and is several times the level provided by the old system.

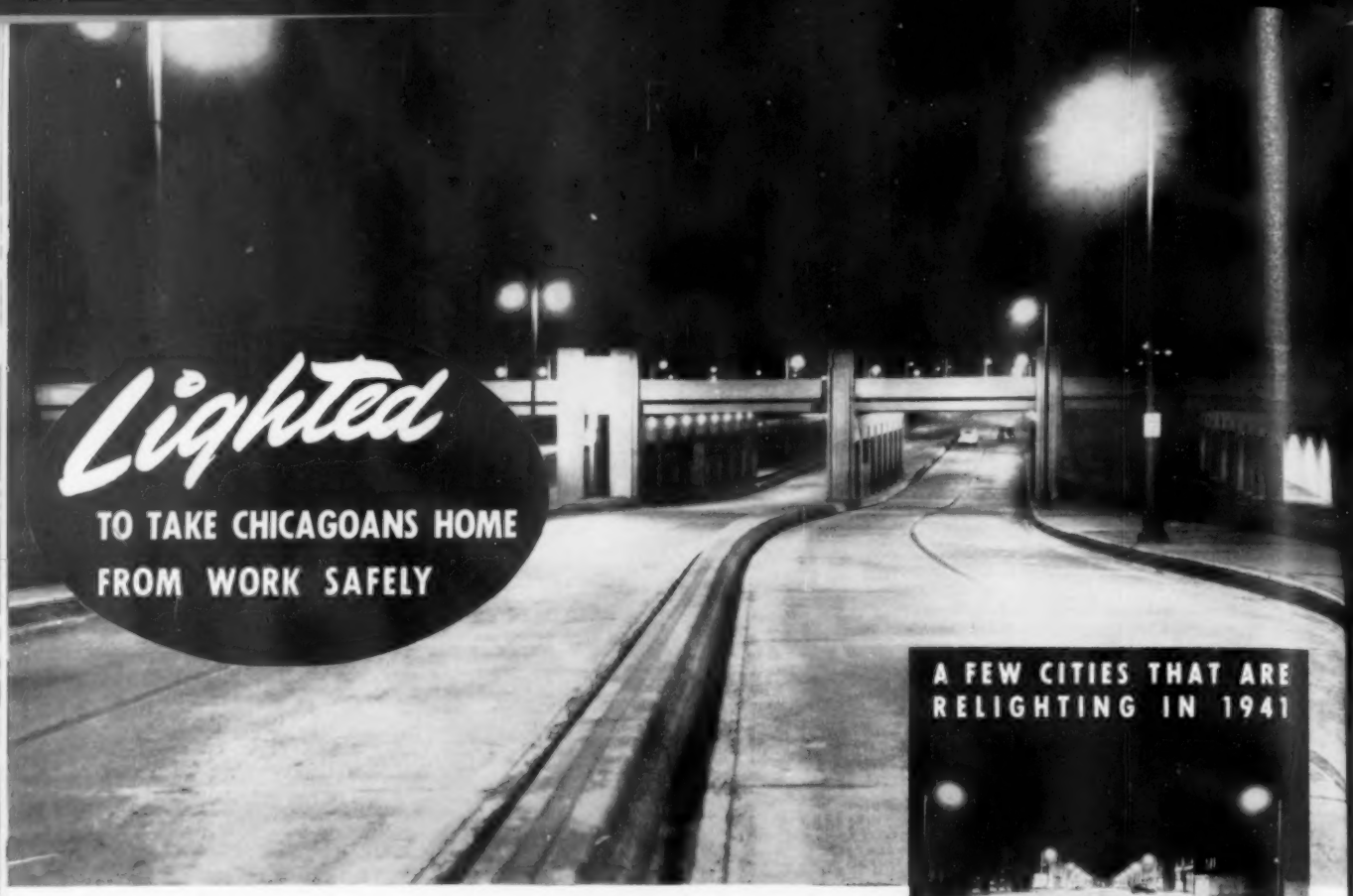
On the important secondary business streets, which are 34 to 38 feet wide, the same arrangement is followed except that the spacing is increased to 80 or 100 feet.

In providing for the new system a new contract was arranged with the Durham Public Service Co. The old system was owned by the city and operated by the company under contract arrangements. The new system is owned by the company, and the city pays a fixed annual charge per unit per year for operation, maintenance and fixed costs.

In designing the electrical features of the system, provision was made for various alternate methods of operation. All lamps may be operated, or alternate lamps can be turned out after midnight. As a further alternative, only those on one side may be burned.

For electrical supply, three-conductor No. 4 concentric service cable is used. The service is overhead but designed to be inconspicuous. For control, the service circuits are equipped with General Electric T-27 time switches, each switch controlling about ten lights.

*Main Street lighting with 10,000- lumen lamps mounted 22 feet above gray asphalt 40-foot roadway and spaced 66 feet apart. Three methods of operation are provided: all lamps burn at once, as shown above; only alternate lamps need burn; or only those on one side of the street need be lighted*



# Lighted

## TO TAKE CHICAGOANS HOME FROM WORK SAFELY

NOT the least of Chicago's problems in the present emergency is the safe, fast transportation of workers. With factories working two and three shifts, and with increased overnight truck transportation, nighttime accidents are bound to increase.

But Chicago's officials know that adequate lighting is ***essential***, that it's the most ***economical*** method of quickly and surely reducing the number of darkness accidents—by as much as one-half. That's why they relighted the heaviest traveled section of Western Avenue Boulevard, using G-E Form 79 luminaires and 6000-lumen lamps. Light-center height is 26 feet and spacing is 100 feet staggered, except at intersections and underpasses.

In these days, you want to speed up nighttime traffic as well as reduce after-dark accidents. You'll find adequate lighting with G-E luminaires does both.

### LIGHTING SPEEDS NIGHT TRAFFIC

On a one-mile section of U. S. highway 422, studies showed that drivers utilized 57.7 per cent of the available safe opportunities for passing during the daytime, 54.6 per cent during nighttime ***with the highway lighted***, but only 38.5 per cent ***with the highway unlighted.*** What's more, with the highway unlighted cars edged one foot closer together, increasing the hazard of side-swiping.

### LIGHTING REDUCES NIGHT ACCIDENTS

From cities that have relighted their thoroughfares come reports of big reductions in night accidents. On 10 miles of Hartford streets darkness accidents dropped 73.2 per cent. Salt Lake City reports night accidents down 85 per cent on 3.4 miles of thoroughfares in the first year after lighting was installed. On the 59-mile White Horse Pike in New Jersey fatalities dropped from 16 to 3 a year.

More factual evidence of this kind, obtained from both small and large cities, is available from General Electric. It may be useful to you who need public support for the purchase of new traffic-safety-lighting equipment. When you are ready to plan a new installation or modernize, General Electric will again help you with recommendations and the newest lighting equipment. General Electric, Schenectady, N. Y.

### A FEW CITIES THAT ARE RELIGHTING IN 1941

300 FORM 79's FOR HOUSTON

300 FORM 79's FO

1500 FORM 79's FOR A

100 TYPE M-2's FOR INDIANAPO

# GENERAL ELECTRIC

454-16-3010

# Can Drivers in Your Town See 1,200 Feet Ahead?

*By* L. A. S. Wood
Westinghouse Lighting Division,
Cleveland, Ohio

THE American Road Builders' Association says that 1,800 feet of visibility distance is necessary for safe driving in daylight on the open road at modern fast speeds. High speeds, as you know, are not uncommon on urban thoroughfares even on some residence streets, and with comparatively little reduction in night driving speeds a visibility distance of this order is required for safe driving at night. Such a visibility distance can only be produced at night by an effective street-lighting system which, to be adequate, should be designed to take care of the worst conditions of high speeds, wet roads, imperfect brakes and poor driver reaction time. Public lighting systems designed in accordance with the I.E.S. Code of Street Lighting will provide in excess of 1,200 feet of visibility distance, and an adequate street-lighting system should make a pedestrian or other driving hazard visible at approximately this distance. Try this on your own street-lighting system. If objects in the roadway cannot be discerned clearly and quickly at 1,200 feet, your system needs to be improved. According to the National Safety Council, 34,500 persons were killed in automobile accidents last year, 19,900 at night and only 14,600 in daylight.

During the last decade, while day fatalities have decreased 17 per cent, night fatalities have increased 9 per cent. This in brief is the night accident problem.

Adequate night visibility is beyond the control of the automobile driver, whose headlamps under the best conditions of light, dry road surfaces only provide visibility distance of the order of 200 feet. The responsibility rests with state, county and municipal officials.

With the exception of white ways where high levels of illumination are provided for advertising purposes, the lighting of thoroughfares and local streets has been consistently neglected. Designed many years ago to facilitate the slow-moving traffic of a bygone era, most of these systems are insufficient in quantity of light and deficient in quality of illumination to meet traffic requirements.

Except on installations where refractors were used, little attempt was made in these earlier street-lighting systems to control the light flux, and much of the equipment in service today is obsolete and deserves the anthem: "Yes, We have no Street Lighting!"

The past several years have witnessed so many changes in street lighting that even those actively engaged in the solution of the night accident problem through adequate visibility have scarcely comprehended the significance of the new developments and that the introduction of a *new* street luminaire has reduced to obsolescence much of the street-lighting equipment now in service.

## Seeing by Contrast

It is now recognized that objects are seen more readily by contrast than by direct illumination; and since objects in the roadway are predominantly dark in color, it is the purpose of modern street lighting to "paint" the roads white with light so that objects may be discerned as silhouettes against the background of the roadway beyond. This is achieved by properly directed light and is made possible by the element of specularity that is present in most road surfaces. The granite chips and other irregularities in a macadam road, for example, reflect light and will produce surface brightness.

Modern street lighting for night traffic safety is therefore designed to illuminate the background rather than the object, thus accentuating contrast and providing silhouette discernment. With modern street-lighting practice it is not necessary—and indeed it is far too costly—to reproduce at night an *illumination* approaching daylight, but it *is* possible at reasonable expense to produce at night, by scientifically designed street lighting, *visibility* conditions equal to, or even better than, daylight visibility.

Many factors have contributed to delays in street-lighting improvements, and a review of some of these will be found not only startling but almost incredible.

Difficulties in developing satisfactory methods of measuring street lighting prior to the acceptance of the objective method have unquestionably been a factor in retarding modernization programs, because public officials have been unable to determine the quality of existing street lighting in respect to visibility.

*Safety engineers and public authorities* point with pride to the downward trend in urban traffic accidents, but while in all sincerity claiming this outstanding achievement as the direct result of nation-wide safety campaigns, they ignore the significance of the alarming increase in night accidents and completely overlook the fact that these safety measures have been directed primarily to the prevention of daylight accidents and, lacking provision for adequate night visibility, have had little or no effect on the night accident hazard.

*Finance committees* have been niggardly in making appropriations for street lighting. In the past decade, while night fatalities have increased, municipal expenditures for street lighting have decreased 17½%, and the energy consumed in street lighting has decreased approximately 30%.

*Police officers* in their accident reports often unintentionally mislead public officials in respect to "lighting conditions" surrounding a night accident, and if there is a street-lamp adjacent to the scene of an accident, the police officer is likely to report "lighting conditions" fair or even good when the visibility conditions are deplorable and were the probable cause of the accident. In Detroit, for example, in the 31 miles of adequately lighted streets, police officers in the three years before relighting reported 51 night fatalities and three day fatalities which were attributed to six classes of driver faults such as "inattention," "had been drinking," "speeding." In the three years after relighting, the fatality experience in these same streets with the same police supervision was 11 night and 6 day deaths attributed to these causes.

*Public officials,* probably influenced by erroneous reports while providing effective palliatives for daylight hazards, have not recognized the fatal character of darkness and have failed signally in night accident prevention.

## Safety with Light

The U. S. Junior Chamber of Commerce, which consists of more than 120,000 young men, 21 to 35, in 1,000 communities, has dedicated itself to the problem of making America's streets and highways as safe at night as in daytime. For the last three years, these young men, unhampered by precedent or fear of political repercussions, have conducted a national "Safety With Light" activity,

# WESTINGHOUSE supplies the answer

A Westinghouse lighting system provides 1500 feet of "visibility distance" for drivers on Atlantic Avenue in Long Beach, California.

Horizontally directed light silhouettes pedestrians and other hazards against the sheen of light on the pavement beyond. This Westinghouse "silhouette of safety" gives drivers quick, sure vision when traveling at maximum speeds.

## Adequate Visibility Distance Aids California Motorists

Through Safety With Light Promotion by the Junior Chamber of Commerce, street lighting's "silhouette of safety" is now reducing night traffic accidents in Long Beach, California.

Before Traffic Safety Lighting replaced outmoded upright units, an extensive study of driving conditions on famed Atlantic Avenue revealed the need of better nighttime visibility for automobile drivers.

The new lighting system consists of 154 Westinghouse Reflectolux Jr. pendant-type luminaires with clear globes. Units are mounted twenty-two feet and are spaced at 121-foot intervals. The luminaires provide a sheen of brightness on the roadway which allows motorists a "visibility distance" of 1500 feet. Drivers are now able to see road hazards clearly and far enough ahead in time to avoid accidents.

The same Traffic Safety Lighting installed in Long Beach and hundreds of cities throughout the country can save lives in your community. Ask the Lighting Specialist in your local Westinghouse sales office for Booklet B-2189; or, write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio.

**Westinghouse** LIGHTING EQUIPMENT

with an annual "Safety With Light" competition in which upwards of 160 cities are participating. Cash prizes amounting to $750 are awarded each year for the most outstanding accomplishment in street and highway lighting. In 1941, two first prizes of $250 each were awarded, one for urban street lighting and one for highway lighting. The prize for street lighting was awarded to the Chicago Junior Association for promoting the lighting on Archer Avenue, and the first prize for highway lighting was awarded to the Bessemer Junior Chamber of Commerce for successfully developing the Bessemer to Birmingham highway lighting system illustrated and described in the July issue.

Present inadequate lighting conditions on streets and highways are a challenge to the people of America. Last year's record of 35,000 persons killed in traffic accidents exceeds the total of all civilians killed in England during the first 12 months of intensive air raiding.

*The electric light and power companies* which supply most of the utilitarian street lighting are with a few notable exceptions reluctant to call public attention to inadequate street-lighting conditions, lest they expose themselves to charges of commercialism. Recently a prominent power company official cautioned the industry to recommend "no more street lighting than the city could pay for."

*State officials*, with a few exceptions, consider highway lighting an unjustifiable expense. The "1940 Texas Highway Accident Facts" will illustrate this point. (See page 99 of the July issue of THE AMERICAN CITY). In this 20-page bulletin, copiously illustrated and describing every conceivable type of accident, there is no mention of those caused by darkness, and the only reference to night driving is an admonition on the back cover to "dim lights when passing at night."

The problem is not "how much some believe a community can afford to pay for its street lighting," but "how much it is *compelled to pay* for an adequate street-lighting system which will prevent night accidents and save lives.

Adequate street lighting of necessity costs more than visible darkness, but it is worth the price. The way to promote a modernization program is to tabulate the traffic accidents and fatalities for the previous year and spot them on a city map. This will show the streets to be relighted first.

# Legal Aspects of Municipal Parking Facilities

(*Continued from page 95. See also page 115.*)

debt incurred by the city for such enterprises.

The bill would also authorize rate differentials due to such causes as the location of the facility and the size of the space occupied. The city treasurer, subject to the approval of the mayor, would be authorized to issue and sell at public or private sale serial bonds of the city to an amount not exceeding $6,000,000 in aggregate principal; said indebtedness would be outside the statutory limit of indebtedness of such city, and payment of the bonds would be made within 20 years.

Although some of the detailed provisions of this bill, particularly the one relating to the financing of these enterprises, apparently would not meet the constitutional inhibitions on municipal corporations in other states, the proposed measure is of utmost importance in this field because it contains a provision which, if enacted, would establish legislative recognition of the automobile parking facility as a public use. That provision, found in Section 1 of the bill, reads as follows:

> It is hereby declared that the free circulation of traffic of all kinds through the streets of the city of Boston is necessary to the health, safety, and general welfare of the public, whether residing in said city or traveling to, through or from said city in the course of lawful pursuits; that in recent years the greatly increased use by the public of motor vehicles of all kinds has caused serious traffic congestion in the streets of the city of Boston; that the parking of motor vehicles in the streets of the city of Boston has contributed to this congestion to such an extent as to constitute at the present time a public nuisance; that such parking prevents the free circulation of traffic in, through, and from said city, impedes the rapid and effective fighting of fires and disposition of police forces in said city, threatens irreparable loss in valuations of city property which can no longer be readily reached by vehicular traffic, and endangers the health, safety, and welfare of the general public; that this parking nuisance is not capable of being adequately abated except by provision of sufficient off-street parking facilities, conveniently located in the several commercial and residential districts of the city; that adequate off-street parking facilities have not been provided by private capital, and private parking spaces now existing must be forthwith supplemented by off-street parking facilities provided, by public undertaking; and that the enactment of Sections 2 to 8 of this act, inclusive, is hereby declared to be a public necessity.

Municipalities planning to establish public parking facilities may find it very helpful if they would carefully check the sources of their power before condemning or purchasing the desired lands, or before converting lands acquired by tax delinquencies or for other public uses into public parking places. Although these sources of power vary in the different states, they may be found in the state constitutions, municipal charters, and the general or special acts of the state legislature. It should be remembered when these studies are made that courts are inclined to construe grants of power strictly against the municipality, and that they limit implied powers to only those which are necessarily incidental to an express power. In other words, the courts in construing a state law authorizing its municipalities only to construct a public parking lot would not necessarily imply that they could charge fees for use of the same, or that they could issue bonds to finance the construction costs.

It might be well to review the decisions of the local courts interpreting these grants of municipal power, or the decisions of the courts of other states interpreting similar provisions of law. In the event that a municipality has no express power under which it can undertake the program that its planning officials desire, it should secure enactment of a state law to cover the situation. A general law, enacted at the request of a number of communities which base their recommendations upon the reports of their planning officials showing the urgent need for remedial measures, would prove most desirable. The detailed provisions should be stated in the law.

This is of utmost importance, particularly since (1) the most suitable locations in many cities for public parking facilities often can be acquired by the municipality at a reasonable cost only by the exercise of eminent domain powers; (2) private property may not be taken from the owner against his will for other than a public use; and (3) public funds may not be expended for private purposes.

The developments which already have taken place in the form of state legislation and municipal action definitely show a tendency on the part of the legislative and executive branches of state and local governmental units to recognize the automobile parking facility as a public use. The increased interest in this field which may be expected throughout the country within the next few years will further strengthen the public use concept of such enterprise. This trend should help to obtain favorable court decisions on the issues of properly developed cases. In the meantime, municipal planners should recognize that the legal phases of the publicly owned parking facility are no less important than plans for the physical layout and financing. The groundwork laid today will influence the judicial determinations of tomorrow.

# Houston PLAYS SAFE AFTER SUNDOWN!

The ever-mounting total of after dark fatalities is a grim testimonial to the cities that have gambled the lives of their citizens on "getting by" with inadequate street lighting—and lost. Houston, Texas, is one of the many progressive cities that prefers to play safe after sundown. The two illustrations show you the results of their street lighting modernization program.

Houston played doubly safe when they selected Union Metal steel standards. These modern mountings insure proper placement of the luminaires for maximum visibility. Their all-steel construction offers long life with minimum maintenance. Attractive design throughout results in a finished installation that is a credit to the community at all times—day or night.

Union Metal has a modern steel standard of a type, size and price to fit every street lighting problem. Write for Catalog No. 71 today.

THE UNION METAL MANUFACTURING CO.
CANTON, OHIO

# Forward Steps

*Reported by Municipal Officials, Chamber of Commerce Executives, and Others*

## *Truck Routing Ordinance Adopted by St. Paul*

ST. PAUL, MINN.—The St. Paul City Council has adopted a Truck Routing Ordinance. This ordinance supplements the Building Zone Ordinance by keeping heavy trucks off residence streets. The ordinance provides that trucks may use any street in an industrial district and any street in the central business district, but must use certain routes (31 in number) connecting these industrial districts and business districts and the state trunk highways leading into the city.

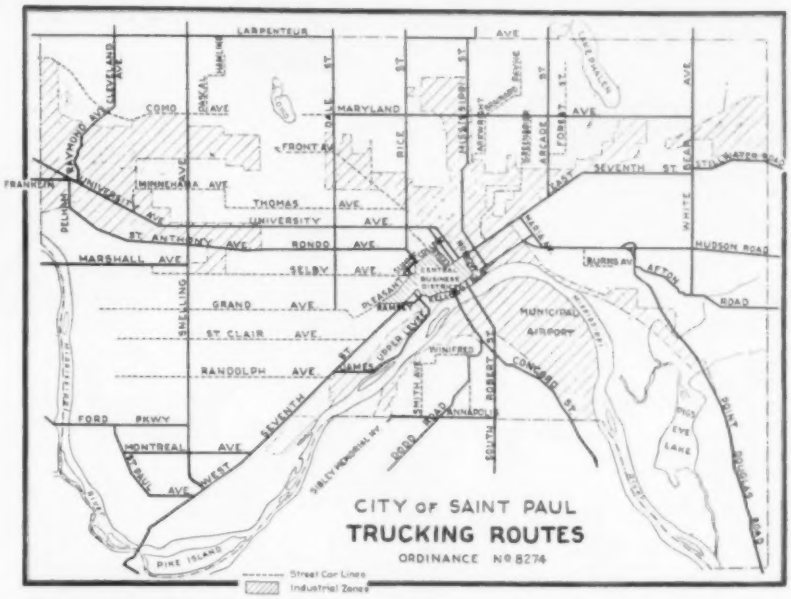
The ordinance was prepared by the St. Paul Planning Board as further protection for residential districts and an extension of the police power to regulate moving vehicles operated for hire. It is based on the provisions of the city charter, which gives the Council the right by ordinance, to define, license, regulate and restrain vehicles of all kinds, and the use of streets, public thoroughfares, highways, and the carrying and hauling of persons and property for hire. It is based on a comprehensive survey of the trucking situation in the city and the routes necessary to be used by these trucks in order to carry on their business.

The ordinance was published July 19, 1941, and went into effect at once, excepting the provision that trucks over 30 feet in length could not use the alleys in the business center, which goes into effect in 90 days. This makes it necessary for large over-the-road trucking companies to unload at their transfer depots and have store deliveries made by transfer trucks of reasonable size. Of the something over 100 trucking companies operating in Minnesota, 78 are operating through the city of St. Paul.

The ordinance was adopted after many hearings with citizens and trucking companies. One trucking route, Cleveland Avenue, a north-and-south artery, was finally sacrificed by the City Council in order to appease property owners and get the ordinance into effect.

GEORGE H. HERROLD,
Planning Engineer.

EDITORIAL NOTE.—A system of truck routes through the city has also been established by ordinance in Appleton, Wis. And in Bay City, Mich., the City Planning Commission, at the request of the Chief of Police, has made a study of routes for heavy trucks and trailers going through the city.




*Trucking routes established by St. Paul's new ordinance, shown by both solid and broken lines. Broken lines indicate streets on which street cars are also operated*

## *Tax-Lien Foreclosure Procedure Improved*

SCHENECTADY, N. Y.—Among New York State cities, Schenectady was one of the pioneers in availing itself of Article 7A of the tax law which set up a procedure for the foreclosure of tax liens. Under this section of the tax law, the city acquired and re-sold scores of properties on which taxes had been long delinquent, thereby getting them back on the productive tax rolls.

However, the time between the acquisition of a property and its re-sale to a private purchaser has often dragged into months under the machinery established for its disposal after the city had secured title. To shorten this interval Schenectady has devised a new procedure using the organized facilities of licensed real estate brokers.

The first sale under the new set-up broke all records for speed. Two Cheltingham Avenue lots were sold within ten days of the date on which the city had acquired them, and the new owner almost at once began the erection of a dwelling on the site.

Under its old system, the city waited until a group of forty or more parcels had been acquired through foreclosure. The list was given the City Council, which then ordered their sale at public auction. Before this auction could be held, it was necessary to advertise it three times. When the sale was eventually held, the bids received by the City Engineer were transmitted to the City Council for approval or rejection.

As can readily be appreciated, all this took a great deal of time.

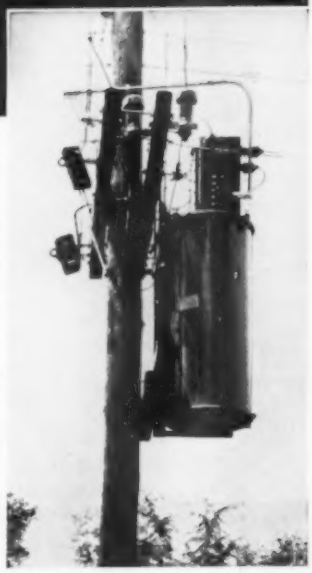
The new set-up eliminates the preliminary action by the City Council, the necessity for waiting until a group of properties has been assembled, and the public auction, making it possible to offer a property for sale immediately upon its acquisition.

### How Sales Are Handled

Tax-lien foreclosed properties are now listed at once with real estate brokers, who have the opportunity to sell them on a commission basis. A prospective purchaser, however, does not have to deal with a real estate man if he does not wish. He may deal with the city directly. To make this possible, the plan provides for a bulletin board at the City Hall which lists all properties, and bids may be filed by the prospective purchaser directly with the Special Counsel in charge of tax-lien foreclosures.

The bulletin board has a card for each property. On one side—visible to the public—the parcel is described as to its location by ward, street or lot number, size and assessed valuation. On the other side—not visible to the

# WAGNER *Type* Y-H Constant-Current Regulators Cut Costs...Assure Dependable Street Lighting



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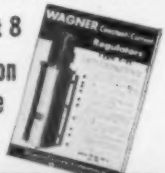


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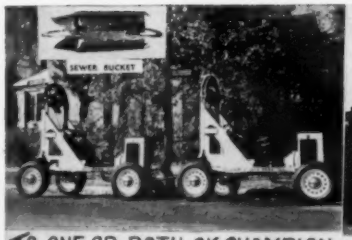


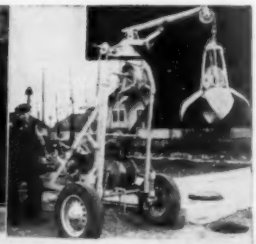

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public—is a complete record as to when the parcel was acquired, how much was against it, and other appropriate information. When a parcel is sold, the card, of course, is moved from the board and filed in a permanent file.

No sale, whether consummated through a real estate broker or through the office of the Special Counsel, is final until it has been given the final approval of the City Council.

### Retaining Property for Public Use

Another aspect of the situation is being studied by the city. It has been felt that possibly some of the properties being acquired through tax-lien foreclosures might fit into plans for future municipal developments, such as off-street parking lots, playground areas, street extensions and the like. A special committee appointed by City Manager C. A. Harrell, consisting of LeRoy C. Purdy, City Engineer, Fred W. Fisch, Director of the Bureau of Traffic and City Planning, and E. E. Mariner, Managing Director of the Schenectady Bureau of Municipal Research, is developing a procedure for a system of review which would ascertain whether any of the properties might be required for such municipal projects. If it was determined that a parcel might be needed in some future development, it would be retained rather than offered for sale with the likelihood that the city might have to reacquire it in a year or so by costly condemnation proceedings.

With business conditions in Schenectady at their best in more than a decade as the result of national defense orders placed with the General Electric Co. and the American Locomotive Co., the city is also making an intensive effort to speed up the tax-lien foreclosure actions themselves in order to take advantage of the good times and get property back on productive tax rolls.

To expedite this work and eliminate a bottleneck, a stenographer-clerk and stenographer have been appointed to augment the Special Counsel's staff. These temporary appointments were made after a careful study of conditions by Corporation Counsel Arlen T. St. Louis, City Engineer LeRoy C. Purdy, Finance Director Harold A. Root, City Manager C. A. Harrell, and the Special Counsel in charge of tax-lien foreclosures, and upon recommendation of the Schenectady Bureau of Municipal Research, which has been cooperating with the city in studying the problem of tax-delinquent land in Schenectady.

KELSIE E. MEAD,
Special Counsel in Charge of Tax Lien Foreclosures.

## *The City-Owned Nursery in Ames*

AMES, IOWA.—This Mid-West college community of 12,500 has put into successful operation a city-owned nursery to provide trees and shrubs to maintain the beauty of its streets, parks and grounds. Started a year ago from plans recommended by the City Plan Commission, the nursery now has about 2,500 trees and 600 shrubs which serve as a source to provide 500 trees each year for street planting. The shrubs will be replanted in the city parks and the cemetery, and around city buildings as desired.

In making its survey of trees, those on parkings along city streets, the Plan Commission reported 7,112 trees, of which 5,130, or 72 per cent, were of desirable types. The substance of the Commission's report was to the effect that Ames needed 2,500 new trees, a goal which is now being sought at the rate of 500 per year.

Pin and red oak, hackberry, Schwedler (red) maple and American elm trees were recommended as the best species for the climate.

At the nursery tiny seedlings purchased at a low price are planted, watered and trimmed until they reach a growth of from 8 to 10 feet, after which they are ready for final planting. All trees are wrapped with creosoted paper and staked to protect them from damage by small animals and children.

To operate the nursery a budget of $2,100 was set up the first year; it is estimated that the annual cost to carry out the plan will be between $1,000 and $1,500. Part of the original cost was for removing older trees listed as hazardous to safety, and also for re-

*Above—Pruning young trees to insure straight growth and a strong trunk. Right—To provide trees for city streets is the purpose of the recently established nursery at Ames, Iowa*

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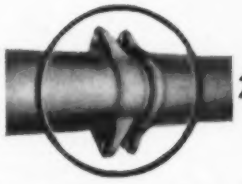
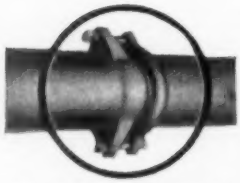
1.  2. 

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moving shrubs on corner parkings, which threatened motor traffic.

In selecting species of trees, the Plan Commission set up the following requirements:

1. Only vigorous trees, entirely hardy, that will withstand growth conditions of city streets.
2. Trees that are long-lived and not too slow of growth.
3. Only trees that are strong, and not brittle or subject to breakage in ordinary storms.
4. Trees that are neat and not given to dropping a constant litter or subject to messy or injurious forms of disease or insect infestations.
5. Trees having a firm, tough bark, not easily bruised or damaged.
6. Trees having a good, deep, compact root system and high branching habit.
7. Trees having a good shade, yet not too dense so as to prohibit grass growth, and with foliage that will wash clean in a rain.
8. Trees *not* having conspicuous flowers or edible fruits or nuts. Experience has proved that it is practically impossible to create a sentiment that will protect such trees from being badly mutilated by the public.

Listed among the objectionable trees were poplars, box elders, Chinese elm, silver maple and ash.

ART JOHNSON.

## *The Development of Salisbury Beach*

BOSTON, MASS.—Salisbury Beach represents the northern three miles of ocean frontage in Massachusetts, from the Merrimac River to the New Hampshire state boundary. The area comprises 520 acres which are being developed for a wide variety of outdoor sports with a definite emphasis on the "outdoor." There will be no merry-go-rounds, roller coasters or fun houses at the Salisbury Beach State Park, and structures will be limited to a bath-house, comfort stations, concessions, a boat-house, and such service buildings as are required for efficient management and safety.

Salisbury Beach is a seaside state park. It is planned carefully for segregated day and overnight use. The entrance road is about 1,200 feet away from the beach and runs parallel with it. Thus all parking related to the beach use is between the road and the ocean, preventing the constant dangerous road crossing evident on most of our present beaches. By this plan more than 100 acres are available for play in its many forms within a safety zone between beach and road. In this same zone will be located all the buildings to which the people on the beach will have safe access.

On the opposite side of the road, an area is being developed especially for overnight campers in either trailers or tents. Each tent site will have a fireplace and individual parking space. Electricity will be available on the trailer sites. Water outlets are spaced conveniently in both tent and trailer area. This camp site will be reached through a single controlled entrance road, and is self-sufficient as far as service and conveniences are concerned.

An informal salt-water swimming pool is under construction and separates the tent sites from the trailer sites. It is for the exclusive use of the campers. For those who wish to use the ocean beach, an attractive walk along the Merrimac River will enable them to reach the beach without crossing the road. Boat basins are planned to meet an urgent need, since the North Shore does not offer many natural basins for the safe mooring of small boats. The proposed water theater with a large seating capacity on the shore is an innovation which should have a popular appeal and make a decided cultural contribution to the usual beach activities.

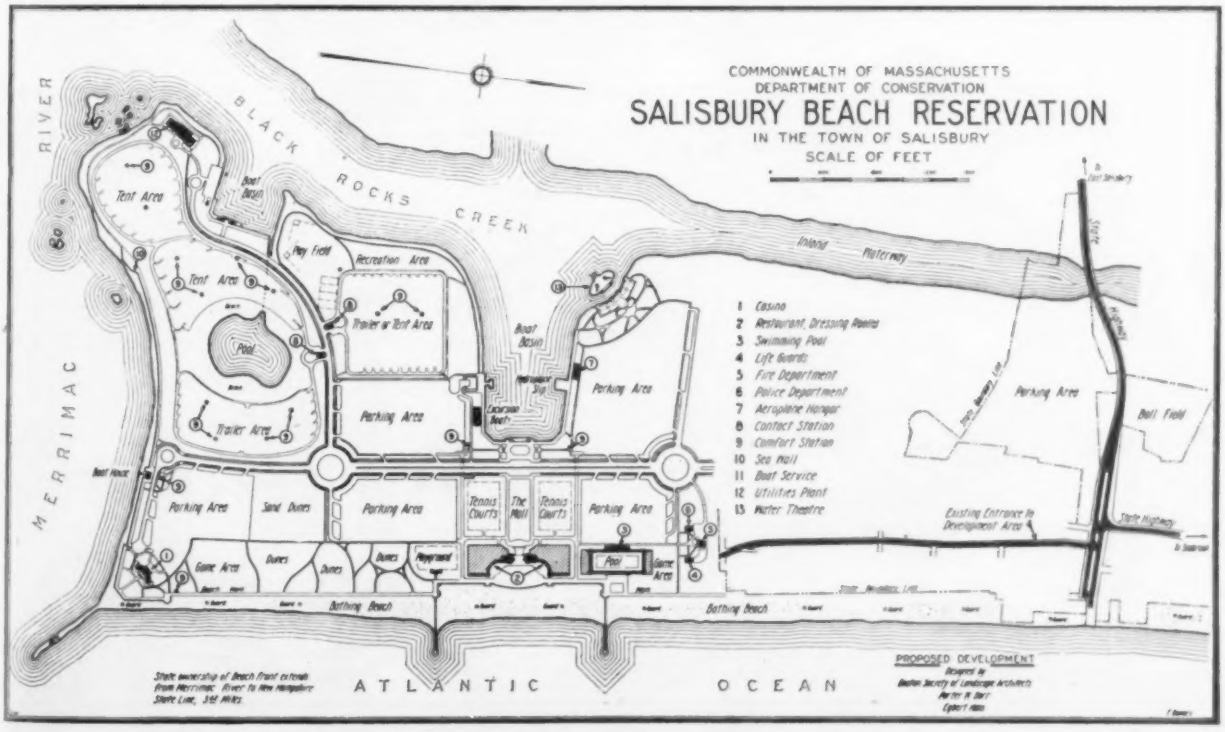
When Salisbury Beach is completed, it should lead to greater recognition of the enormous potential values of our many beaches as yet undeveloped.

EDGAR L. GILLETT,
Director, Division of Parks and Recreation, Department of Conservation, Commonwealth of Massachusetts.

## Kansas City Property Owners to Pay 90% of Improvement Cost of Municipal Parking Lots

UNDER A 1941 STATE ENABLING ACT which gives cities the right to establish municipal parking accommodations, Kansas City, Kans., is setting up six off-street parking lots along the two streets parallel to its "Main Street" business district, the International City Managers' Association reports.

Property holders petitioned the city for the parking spaces and will pay 90 per cent of the $120,000 cost of the improvement charged to the "benefit district." The city will pay the remaining 10 per cent. Maintenance of the six lots, which will be of special service to shoppers and downtown office workers, will cost about $8,000 a year.



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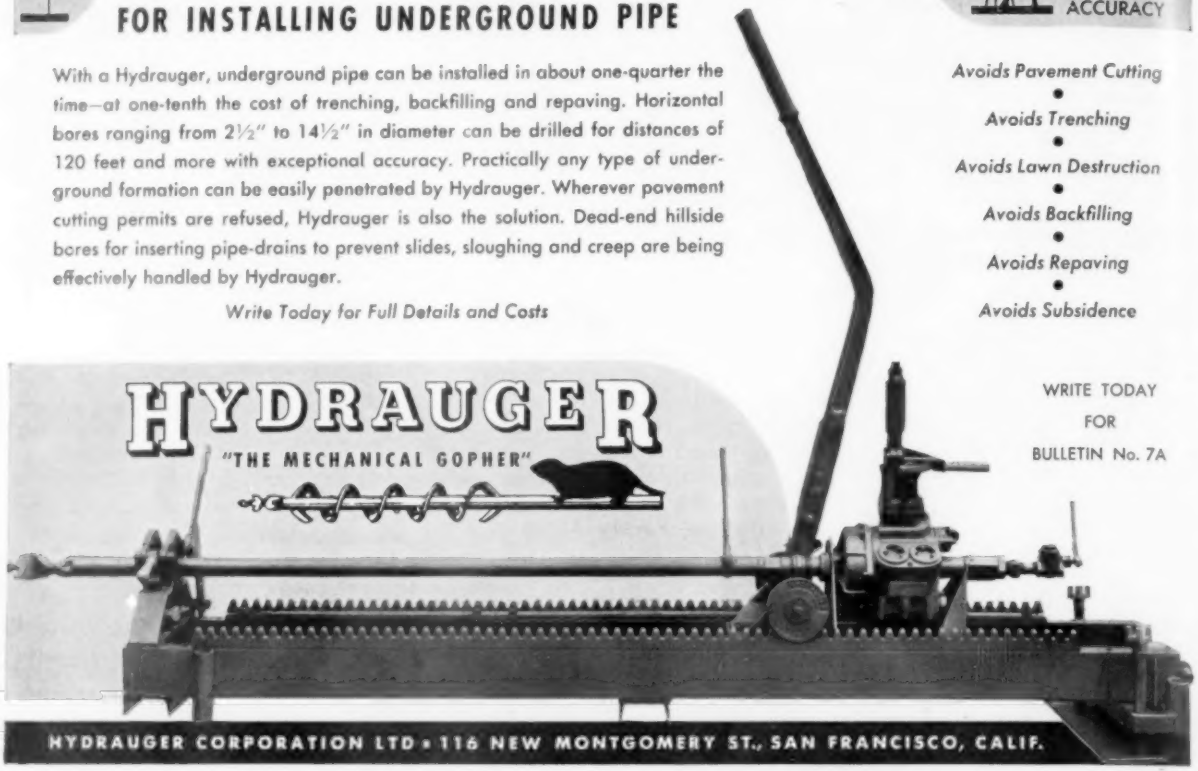

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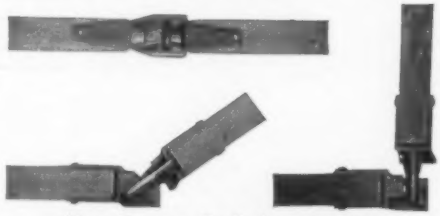

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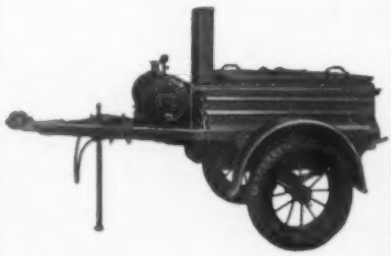

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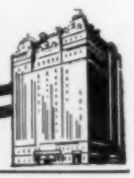


# Improving Municipal Administration

**Current Items from the Public Administration Clearing House**

## *To Facilitate Exchange of Local Governmental Services*

CIVILIAN DEFENSE LEGISLATION adopted by California this year removes a double barrier to the exchange of such governmental services as police, fire, health and welfare protection between cities during emergencies. In calling attention to this statute, the American Municipal Association points out that besides giving local governments—cities, townships and counties—authority to perform such services outside city limits, the new law removes the danger of liability for accidents and damages occurring during performance of the services. Heretofore these barriers discouraged even extension of fire protection to suburban and rural areas.

While adopted as a civilian defense measure authorizing a public agency to aid another during national or local emergencies created by military attack or sabotage, the California statute assures close protective cooperation during floods, earthquakes and other emergencies of normal times. Wording of the mutual aid law makes for broad interpretation and provides that expenses of aiding a city during an emergency shall be considered spent for protection of the city extending aid.

Of particular significance, the Association says, is the provision that privileges and immunities from liability and exemptions from laws, and pensions, workmen's compensation and other benefits applying to officers or employees of a city while acting within its jurisdictional limits apply to them in operating outside these limits during an emergency.

"The new law definitely is a part of the civilian defense effort," the Association states, at the same time pointing out its value during normal times. It was drafted by California municipal officials and legislators after discussions of the problem with Federal civilian defense authorities. The discussions took note of problems of British cities unable to render aid to neighboring communities during and after bombing raids because of legal restrictions, and of experiences of American cities held liable for accidents while giving aid outside jurisdictional limits.

Many cities extend fire protection to outside areas, usually on a contract basis, the Association points out. However, liability for accidents usually is retained unless the protection is placed on a governmental service basis, as has been done by several states and this year by Texas. Oklahoma took this step in 1939 after a city was held liable for personal injury caused by firemen in a run to a neighboring community. The Oklahoma law first allowed cities to offer protection by contract, then was amended to place the protection on a governmental service basis to avoid the liability risk.

## *For Annual Reconsideration of Property Exemptions*

LOCAL TAX ASSESSORS are strongly in favor of requiring annual written petitions as a prerequisite to granting tax exemptions on real estate, a poll by the National Association of Assessing Officers shows.

In getting the opinion, the Association polled about 600 members of the organization in submitting this question:

"As a condition which must be fulfilled before an assessment authority can give official recognition to the tax-exempt status of privately owned real estate which otherwise is eligible for exemption, should the owner be required by law to file an annual written petition seeking the exemption?"

Of the 159 answers received so far in the poll, there was a ratio of 8 to 1 in favor of requiring annual written petitions. A tabulation of results shows 134 in favor of the requirement, 16 not in favor, and 9 uncertain.

The "uncertain" answers were so registered because they were qualified to some extent. Among the qualifications were that "it is all right for homesteads but not for institutional property," "might increase work too much," and "status of churches and other institutional properties so well known that annual applications are unnecessary."

In reporting results of the poll, the Association pointed out that at least 20 states require persons claiming certain property tax exemptions to file their claims in writing. In 9 of the 12 states exempting homesteads from taxes, for example, an annual application for exemption must be made, while in 12 of the 20 states exempting real property of veterans, the veterans must apply annually for exemption.

Periodical applications for exemptions are almost never required for government-owned property and are necessary in only 8 states for institutional property. Newly located factories when exempted from taxation usually get this status under terms of a contract or an ordinance, and the filing of a copy of this document with the assessors serves in lieu of the annual application.

# City Manager Appointments

E. J. Allison, City Manager of Hays, Kans., from 1938-40, returned to this position on August 9, succeeding H. V. Erickson.

Gongalo Diago succeeded Fernando J. Geigel as City Manager of San Juan, Puerto Rico, on July 3.

Elmer Klement, City Engineer, has been named Acting Manager of Fort Atkinson, Wis.

Russell E. McClure, Secretary of the Independent Business Men's Association, has been named City Manager of Wichita, Kans.

Boyd McDaniel, City Engineer, has been named Temporary City Manager of Big Springs, Texas, with a strong possibility that the appointment will be made permanent. He succeeds E. V. Spence, who had been manager since August, 1931.

R. B. Meserve, Assistant City Manager of St. Augustine, Fla., has been appointed City Manager of Fernandina, Fla., to succeed William J. Deegan, recently promoted to De Land, Fla.

R. G. Mitchell, a local business man of Auburn, Maine, will fill the unexpired term of David Walton, who resigned to accept a position as Chairman of the Maine Unemployment Compensation Board.

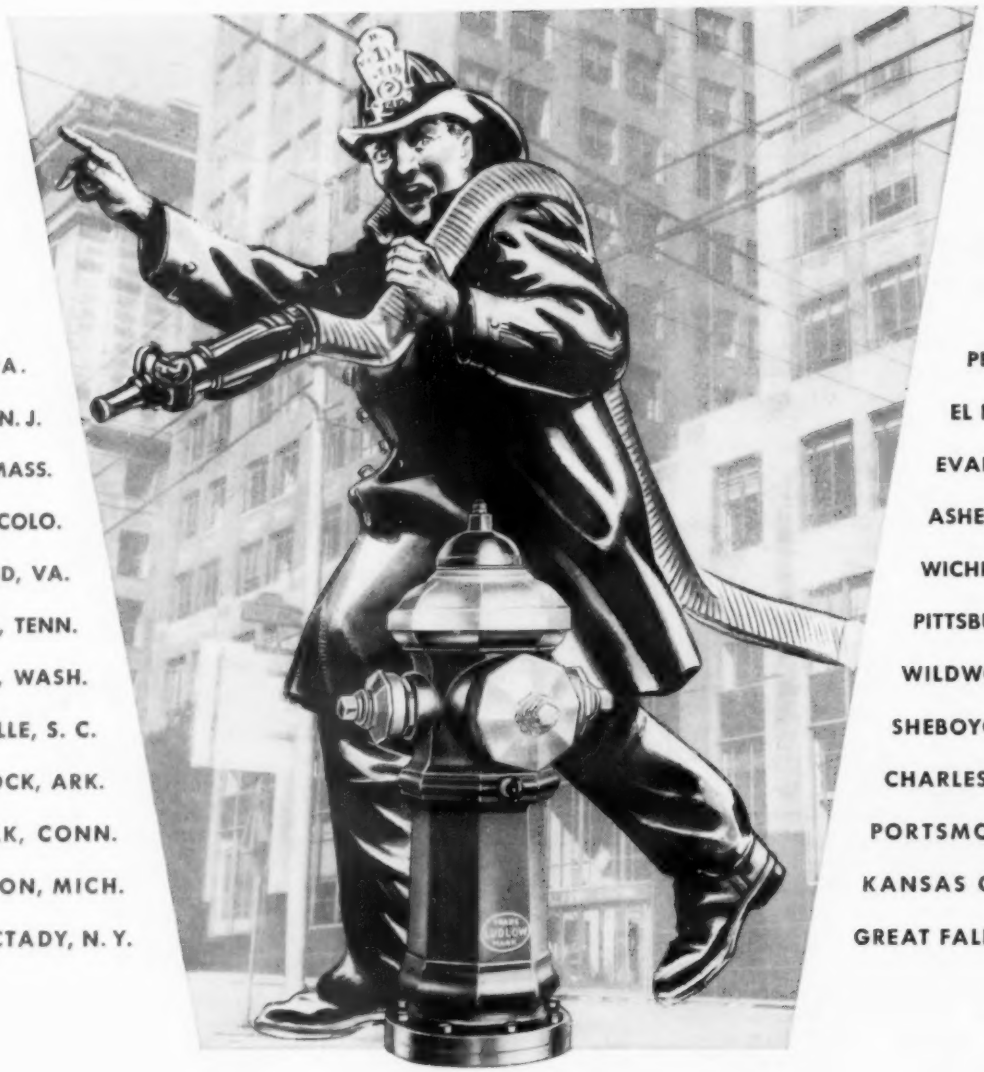
Ralph Mittendorf, former City Auditor, has been appointed City Manager of Ironton, Ohio, to succeed Leonard G. Howell, recently promoted to Port Huron, Mich.

Donald R. Judkins succeeded L. L. Blanton as Town Manager of Largo, Fla., on August 1.

James G. Wallace, Manager of Bangor, Maine, from 1932 to January, 1941, has been appointed first City Manager of Wilmington, N. C.

J. Merton Wyman, former Chairman of the Board of Selectmen at Norway, Maine, has been appointed Town Manager of Rumford, Maine. He succeeds Arthur L. Dow, who is serving as a Major in the U. S. Army.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.



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LOWELL, MASS.
DENVER, COLO.
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GREENVILLE, S. C.
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NORWALK, CONN.
MUSKEGON, MICH.
SCHENECTADY, N. Y.

PEORIA, ILL.
EL PASO, TEX.
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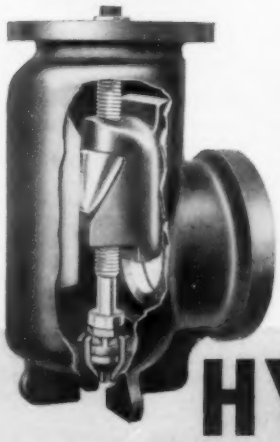

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FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

# Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

## *Zoning Ordinance — One-Family District — Change of Conditions by Natural Causes—Reasonableness*

FLORIDA.—*Forde v. City of Miami Beach*, Supreme Court, April 18, 1941, reported in 1 S. W. 2d, p. 642.—In 1930 the ocean front lots in question had a depth of about 240 feet. By reason of erosion caused by a hurricane, and subsequent storms and changes in the ocean currents, and possibly from the construction of groins on each side of them, their depth now is approximately 60 to 70 feet. In 1930, these lots were zoned for one-family residential use. The plan was made by a nationally known planning expert. It is claimed that this provision, as a part of a well-considered plan, is reasonable and necessary to the accomplishment of the city-wide zoning plan.

The plaintiff Forde is seeking to obtain permits to erect multi-family dwellings on these lots. He claims that, whatever may have been the case in 1930, the property is no longer suitable for development as "estates," and that to confine it to single-family use is unreasonable; and the Court so holds.

The object of all use zoning, in a measure at least attainable, should be to put the land to the uses to which it is best adapted, and the result will normally be to increase values. Such a zoning plan should be sufficiently stable to protect those who comply with the law, but at the same time it should be susceptible to change, so as to meet changing conditions not recognized or not possible to foresee when the ordinance was adopted, and nature has made changes in these lots, making it no longer reasonable as to them. A change in the ordinance as to them must therefore be allowed. The lots are no longer adapted to single-family use and cannot be made so except at a prohibitory cost.

Witnesses for the city were of the opinion that in time the growth of the city will create a demand for this property for single-family residential use. The city will undoubtedly grow, but how long it will take for a growth to create a demand for this property for single-family residences is a matter of opinion and at best problematical.

When property restricted to a definite use by a zoning ordinance changes its physical character from natural causes to the extent that it is no longer adaptable to the use it is zoned for, then it becomes the duty of the zoning board to relax its restrictions to prevent confiscation, just as much as in the case where the regulation was invalid in the first instance.

Justification for the ordinance as it is, as applied to these lots, must be found in the control over future development. But the mere opinion or belief that a prospective demand will develop for the property for single-family use in the not distant future, as weighed against the concrete fact that, as it stands, it is unfit for that use, cannot indefinitely serve as a basis for the continuation of these zoning provisions as they now are. It appears that the property now is, and must remain for the unpredictable future, unimproved and unproductive and a source of expense to its owners, the annual taxes being heavy. It is apparent that if the present lack of demand for the property for single-family use should not change, the value of the property would largely be consumed by the payment of these taxes, and that to continue the present restrictions would almost, if not quite, amount to a taking without compensation, and hence be beyond the range of valid regulation.

# Town and Country Planning Progress in England

THE English quarterly, *Town and Country Planning*, which has continued regular publication despite the war, carries in its Summer, 1941, issue the following announcement:

"The Garden Cities and Town Planning Association announces a change of name. In future its title will be Town and Country Planning Association (incorporating Garden Cities and Town Planning Association).

"The change comes at a time when public opinion and the Government have accepted the principle of national, town and country planning. When the Association was started, in 1899, there was no statutory planning in Britain. The only way of creating a really good environment for numbers of city workers was the building, mainly by private initiative, of new towns and town extensions. After the Housing and Town Planning Act of 1909 was passed, the Association (then the Garden Cities Association) enlarged its name to include town planning.

"Later, statutory planning was extended to built-up areas. It is now generally agreed that it must be further extended to include some control of the size and density of existing towns and some guidance to the location of industry. This implies that the creation of new towns and the extension of small towns falls into place as one very important element in a larger policy. Coupled with it there must be planned redevelopment of the old centers and the protection against random development of agricultural land and areas of great natural beauty. National planning opens up the possibility of applying, over a wider field, the essential planning principles of the Association.

"This policy includes planned building development, with ample light, gardens, and open space; limitation of the size of towns and reservation of country belts around and between towns; pooled or public ownership of land over large areas; coordinated planning of housing, industry, and community buildings; decentralization from congested centers to existing smaller towns and new towns, and good design in all development. The Association will continue and intensify its consistent advocacy of planning on these principles in national, regional, and local development, whether by public or private agencies.

"In conclusion, the Association expresses its wish to form planning groups to study and popularize sound planning in all towns and districts and to work out its local and regional applications."

### The Replanning of Scotland

Among other important articles in this Summer, 1941, issue of *Town and Country Planning* is a discussion of "The Replanning of Scotland," by William Power. The following paragraphs are especially significant:

"The war has brought national replanning into the realm of the grimly practical; and Scotland is an ideal national unit. One of our handicaps has been our land system. We can no longer afford to be held up by the caprices of landowners. The state must

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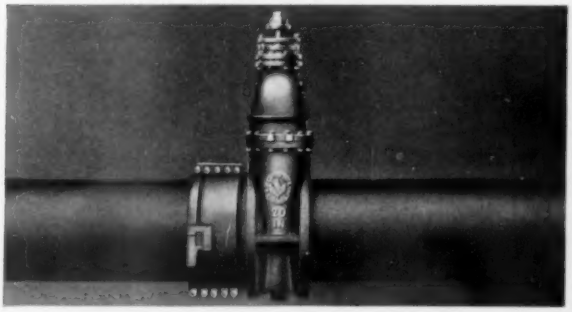

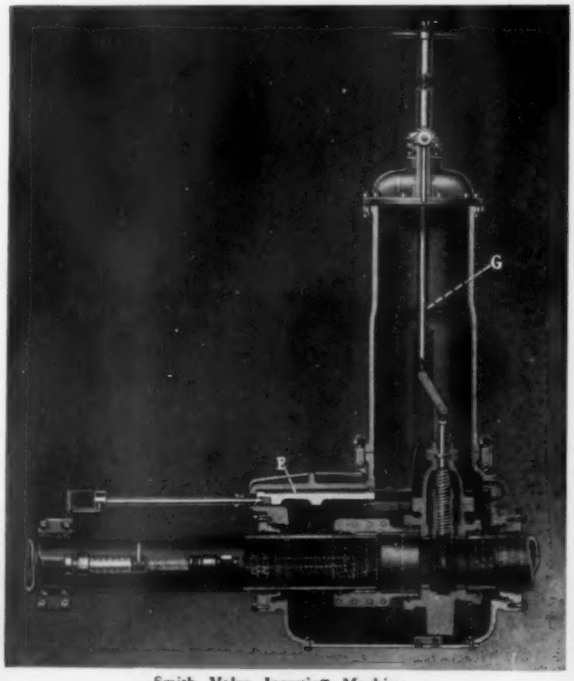


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assume wide powers of land control and, where necessary, of land acquisition. Agriculture must have priority over sport or pleasure. Forestry must be linked up with agriculture in our Scottish Department. There must be a limit to the extent of individual land-ownership, and every owner or occupier must satisfy the authorities that the best possible use is being made of the land. . . .

"The Celtic polity was communal, aiming at the full and fine development of the personality of every member; and the Celtic polity is the Scottish ideal. National replanning will help it, by giving it the sound economic basis, and the social organization, it has hitherto lacked. Town and country, industry and agriculture, will be fruitfully complementary, repeating their mutual influence in every parish. Above all, Scotland itself, which for many decades has been largely waste and forbidden land, terra incognita to the majority of Scots, will have been brought completely into the Scottish scheme of things yielding its full contribution not only in the material requisites of life, and in health and recreation, but also in the manifold inspiration of its history, literature, and folk-lore, and its glorious scenery."

### Letchworth Garden City and Its Progress

The same issue contains a statistical survey of the present status of England's first garden city, Letchworth,* which will be heartening to friends of the garden city movement throughout the world:

| | |
|---|---|
| Area of estate | 4,562 acres |
| Area of town | 1,528 acres |
| Residential population (approximate) | 20,000 |
| Daily influx of workers from adjacent villages (approximate) | 6,000 |
| Number of workers employed in factories | 14,000 |
| Number of houses | 4,959 |
| Number of shops | 192 |
| Number of hotels | 6 |
| Number of factories and workshops | 216 |
| Area of parks, commons, playing fields, sports grounds, etc. | 300 acres |
| Mileage of roads | 41 |
| Number of street trees planted in town | 7,000 |
| Number of places of worship | 18 |
| Number of theaters and cinemas | 3 |
| Number of sports clubs | 81 |
| Number of elementary and secondary schools | 12 |

Dividends paid. Full 5 per cent for 17 years and £20,000 paid-off arrears of cumulative dividend accruing before 1925.

* See article on "England's First Planned Town," by Alfred T. Pike, in THE AMERICAN CITY for November, 1930, page 105, and comments by Sir Raymond Unwin on the Congestion Problem, in THE AMERICAN CITY for October, 1935, page 42.

**Turn to page 69 and read "British Local Government Carries On"**

# "Common Denominators" for City Replanning

"IF THE old civilizing values of urban living are to become real again, replanning must transfer these centers into places of character, outstanding interest and expressions of city personality. They must be made accessible and stripped of the drabness, unsightliness and shabbiness that mark them today."

This is the theme of a report on Milwaukee, fourth in a series of studies of twelve principal American cities, just released to its members by the Urban Land Institute, the agency organized by the National Association of Real Estate Boards to study trends affesting real estate and to advance research and education in replanning and rebuilding cities.

K. Lee Hyder, Vice-President of the American Appraisal Company, and Howard J. Tobin, Manager of City Loans for the Northwestern Mutual Life Insurance Company, were the special representatives of the Urban Land Institute who made the Milwaukee study. Cities previously studied were Boston, Cincinnati and New York.

Proposals drafted by Institute representatives for revitalizing the hearts of these four cities to make them more enjoyable for residential and business purposes, to attract new trade and industries and to raise to higher levels the social and economic values involved, include as "common denominators" steps to meet the need for:

(1) A long-range housing program which would include restoration of blighted and dilapidated close-in areas and efforts to make the cities more compact.

(2) Revision of building codes to make zoning regulations more constructive and more in scale with actual requirements.

(3) Immediate action for traffic and transportation betterment, including more off-street parking facilities and the by-passing of through traffic around the business district.

(4) Consolidation of a multiplicity of municipal governments into one metropolitan government supported by the entire metropolitan area.

(5) Assessment of real estate on a basis justified by current earnings.

(6) Firm action to abolish such nuisances in the business district as overhead signs, billboards, smoke, noise, and catch-penny sidewalk businesses.

## Defense Public Works Program in Action

THE Defense Public Works program* to provide public facilities or services necessary to the health, safety or welfare of persons engaged in defense activities is swinging into action.

President Roosevelt's approval of 26 projects in 12 states was announced on August 18 by Federal Works Administrator John M. Carmody.

More than $395,000,000 worth of applications for projects are in process of examination in the central and regional offices of the FWA's Division of Defense Public Works.

Four of the projects approved by the President are for school facilities in Michigan and Mississippi; 15 for recreation centers in Illinois, North Carolina, Texas, New York, and Virginia; three for community buildings in New Jersey; a hospital addition and nurses' home in Ohio; a hospital for Negroes in Virginia; water-works improvements in Virginia; and a sewerage system in Louisiana.

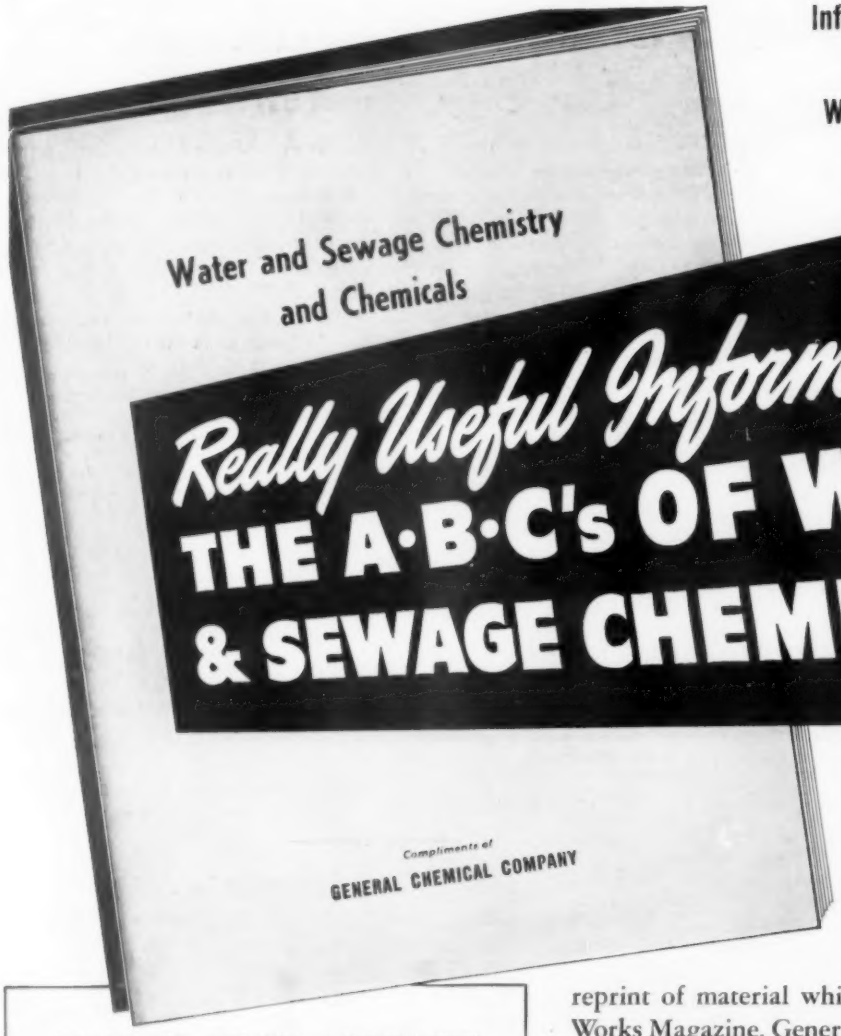
* See THE AMERICAN CITY for July, 1941, page 5.

# The Municipal Bond Market

Recent sales of new issues from the July numbers of *The Bond Buyer:*

| Amount | Borrower and Purpose | Rate (%) | Term (Years) | Basis (%) |
|---|---|---|---|---|
| $ 202,323 | Youngstown, Ohio, School; Refunding | .875 | 7/2 | .875 |
| 400,000 | Upper Darby Tp., Pa., School | 1 | 1-16 Ser. | .90 |
| 400,000 | Bridgeport, Conn., Refunding | 1 | 6.25 Avg. | .95 |
| 155,000 | Ithaca, N. Y., Street Improvement | 1 | 5.5 Avg. | .98 |
| 1,165,000 | Delaware, Public Improvement | 1.10 | 7-33-12 O.—A. | 1.05 |
| 100,000 | Groton, Conn., Water and Electric | 1.25 | 1-10 Ser. | 1.08 |
| 100,000 | Agawam, Mass., Office Building | 1.25 | 1-10 Ser. | 1.19 |
| 1,000,000 | Waterbury, Conn., Water Supply | 1.5 | 13.5 Avg. | 1.44 |
| 1,270,000 | Minneapolis, Minn., Refunding | 1.5 | 1-10 Ser. | 1.47 |
| 800,000 | Allegany Co., Md., School | 1.60 | 1-20 Ser. | 1.55 |
| 2,738,000 | Kansas City, Mo., Water Revenue | 1.75 | 14.5 Avg. | 1.837 |
| 160,000 | Madison, Ohio, School | 2 | 12.66 Avg. | 1.84 |
| 243,000 | Scranton, Pa., Judgment Funding | 2 | 10.33 Avg. | 1.96 |
| 150,000 | Lakewood, Calif., Public Utility Dist. | 2.25 | 2-16 Ser. | 2.25 |
| 110,000 | St. Louis Park, Minn., Sewer Warrants | 2.25 | 6.5 Avg. | 2.332 |
| 110,000 | Decatur, Ill., Water Revenue | 3 | 5.66 Avg. | 3 |
| 114,000 | Rock Island, Ill., Refunding River and Rail Terminal | 3.5 | 16.5 Avg. | 3.5 |

**Information for Every Operator—**
**Compiled by**
**Water and Sewage Authorities**

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# Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, WASHINGTON, D. C.
CHARLES S. RHYNE, Executive Director, and JOHN A. McINTIRE, Consultant

## *Legal Power of Municipalities to Acquire and Operate Parking Lots*

A question which has been arising with increasing frequency is the power of municipalities to acquire and operate parking lots. While the courts have not in so many words said that a city can or cannot acquire real estate for this purpose, they have made certain determinations which may throw some light upon the authority of cities to adopt systems of city-owned and operated parking lots to aid and relieve the congested areas of their streets. Numerous cities, including San Diego, Chicago, Bay City, Saginaw, Trenton, Hackensack, Memphis, Detroit, Philadelphia, and Oshkosh, to name but a few, have already established municipal parking lots and are now successfully operating them.

Whether a city may acquire land for such purposes, of course, depends entirely upon the delegation of the authority to do so. In the absence of any specific delegation of power, however, the power may be implied from other municipal powers to regulate and control traffic. The 1941 North Carolina Legislature gave cities and towns the "power to own, establish, regulate, operate, and control municipal parking lots for parking of motor vehicles" within their corporate limits and to charge for use of such facilities. California, Iowa, Kansas, Maine, and New Hampshire adopted similar legislation in 1941. In 1939, Michigan cities were granted the power to issue revenue bonds for the acquisition and equipment of parking lots. It has been suggested that parking meter revenues be used for the acquisition of such municipal parking lots. See 6 MUNICIPAL LAW JOURNAL 57.

Cities may provide for the safety and well-being of their citizens through the exercise of the police power, and it follows that a municipality may establish a system of municipally owned and operated parking lots as a safety measure, in that such operation would relieve congested thoroughfares and thus be no more than a regulation of traffic. Also, it appears that inasmuch as many municipalities are authorized to own and operate public utilities, the classification of municipal parking lots as public utilities would not be an improper construction of such powers. The power to operate and acquire parking lots might therefore be implied from powers already delegated, thus rendering an enabling statute unnecessary.

In the case of *City of Cleveland* v. *Ruple*, 130 Ohio St. 465, 200 N. E. 507, 103 A. L. R. 853 (1936), it was held that a public underground exhibition hall, constructed with public funds for holding public exhibitions or to provide space for storage, garage, or other public purposes, and for all uses incidental thereto, may not lawfully be used by the municipality in carrying on a purely private garage business in competition with other private garage businesses in the vicinity, such use being an undue interference with the constitutional rights of private property. But, it was held further that such a building may be used to permit the storage of automobiles by officers and employees of the municipality while performing their duties. In accord with this case in so far as the holding that city officers and employees may use a public building for parking purposes is concerned, is the decision in *Neil* v. *Kansas City*, 194 Mo. App. 288, 188 S. W. 919 (1916). In *Alabama Power Co.* v. *Ickes*, 302 U. S. 464, 58 Sup. Ct. 300, 82 L. ed. 374; *Duke Power Co.* v. *Greenwood County*, 302 U. S. 485, 58 Sup. Ct. 301, 82 L. ed. 381; and *Arkansas-Missouri Power Co.* v. *Kennett*, 78 F. (2d) 911 (C.C.A. 7), the courts have held that competition of municipal with privately owned utilities is no legal injury to the private utility, and competition of a municipal with a private parking lot would seem to fall within the same rule.

The *City of Cleveland* and *Kansas City* cases just cited constitute all the reported court decisions on this problem, but the Attorney General of the state of Minnesota has ruled that cities have the implied power to acquire and operate parking lots. See 6 MUNICIPAL LAW JOURNAL 57.

In connection with this general problem it may be well to refer briefly to zoning requirements that off-street parking space be provided by apartment houses, etc. The city of Los Angeles has such a zoning requirement, and City Attorney *Ray L. Chesebro* reports that there have been five or six violations of this ordinance, all of which have been successfully prosecuted. No written opinions were handed down by the Municipal Court of Los Angeles before whom these cases came. See Report No. 66 of the National Institute of Municipal Law Officers entitled "Off-Street Parking—Validity of Zoning Requirement that off-street garage space be provided for at least one automobile for each family housed."

With the ever increasing traffic congestion in most cities, and the need for a better and more efficient method of handling this traffic, municipalities will have to adopt some policy concerning parking regulations, either by establishing their own parking lots, or by enacting more effective regulations on the parking of vehicles on city streets. The establishment by municipalities of their own parking lots seems to offer one solution to this acute problem, and the legal power to establish such municipal parking lots seems to be readily available to municipalities, should they desire to take advantage of it.

## *Applicability of Municipal Building, Plumbing and Other Regulations to Federal Defense Housing Projects*

With the rapidly expanding activities of the National Defense program in connection with the construction of defense housing projects there have arisen many problems with which municipalities are vitally concerned. One such problem is the application of municipal regulatory measures to Federal defense housing projects. Up to the present time there have been only a few court decisions on this matter, and all these decisions hold that municipal building codes, plumbing ordinances, and the like do not apply to the Federal Government, on the ground that the Federal Government exercises exclusive control and has complete jurisdiction over such projects.

The most recent case to arise was in Davidson County (Nashville), Tennessee, wherein the Criminal Court of that county ruled in May, 1941, that local building codes do not apply to defense housing projects being erected by the Federal Government. The County Plumbing Inspector had attempted to penalize the contractor for not following the local plumbing code. The project was, however, being constructed in conformity with the "simplified national code" tested and perfected by the Federal Bureau of Standards. The position of the Federal Government that it was not bound by the local building code was sustained by the Court.

The only decision of an appellate court on this problem is that of *Oklahoma City* v. *Sanders*, 94 F. (2d) 323, 115 A. L. R. 363 (C. C. A., 10th, 1938), which arose as a result of the attempted application of municipal regulations requiring licenses, bonds, and inspections on a Federal project in Oklahoma City. In this case, the Federal Government was held not to fall within the purview of such municipal regulations, as the Federal statute providing for the acquisition of the property did not give to the state the right to exert its police power over such property even though civil and criminal jurisdiction over the property had been retained by the state in granting the Federal Government control of the property. It was further held that the grant by the state of jurisdiction over the premises to the Federal Government, with the exception noted above, included the power of regulation and control in matters which ordinarily fall within the police power of the state, such as building regulations.

In Report No. 69 (February, 1941) of the National Institute of Municipal Law Officers, there is an opinion to the effect that the requirement of securing a building permit does not apply to the construction of a Federal post office. Also see Report No. 45 (June, 1939) wherein there is a similar opinion on the applicability of a local building code to the demolition of a Federal post office. The *Sanders* case, *supra*, was relied upon in both of these opinions as authority for questioning the application of local regulations to the construction and demolition, respectively, of a Federal post office. Also in this connection see the cases of *Sollitt & Sons Construction Co.*, 161 Va. 854, 172 S. E. 290 (1934); *Winston Brothers* v. *State Tax Commission*, 156 Ore. 505, 62 P. (2d) 7 (1936); and *James* v. *Dravo Contracting Co.*, 302 U. S. 134 (1937), and compare *United States* v. *Certain Pieces of Land in the Borough of Audubon*, 6 MUNICIPAL LAW JOURNAL 76.

### Civil Service—Notice and Hearing—Dismissal

Where a civil service employee is given no written notice that he has been suspended or that his compensation is lowered and the employee does not affirmatively acquiesce in a compensation reduction, the fact that the employee did not seek a hearing under the applicable statute is immaterial. The action against his interest is invalid if the statute is not followed. *Rappaport* v. *City of Lawrence*, 33 N. E. (2d) 290 (Mass. 1941).

### Initiative and Referendum—Legislative Power—Salaries

The fact that a city manager is by charter empowered to fix salaries of members of the police department does not change the essentially legislative character of salary determination. Whether this action is legislative or not, the reservation of the power in the people to initiate laws and enact them by referendum covers any general powers, including fixing of salaries, and an initiative ordinance establishing a scale of minimum salaries for members of the city's police department is valid. *Spencer* v. *City of Alhambra*, 111 P. (2d) 910 (Cal. 1941).

### Taxes—Charitable Exemptions

A building to be used for a home for the aged and indigent but not actually in use for that purpose at the time of assessment was held properly exempt as a charitable use, since it was held ready to receive inmates at that time. *Trenton Ladies Sick Benefit Soc.* v. *City of Trenton*, 17 A. (2d) 809 (N. J., Feb. 4, 1941).

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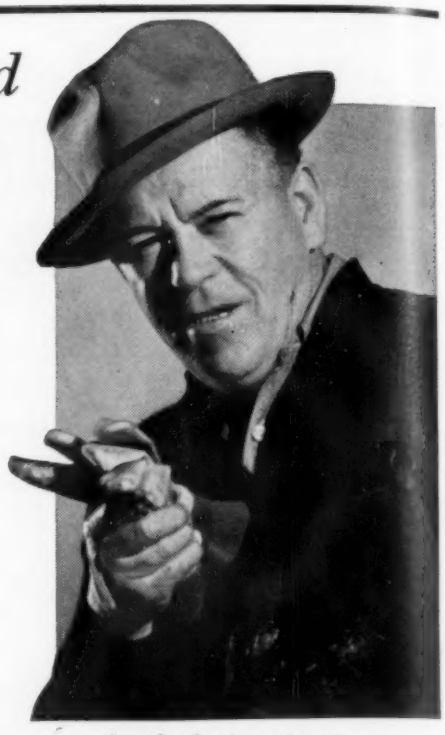

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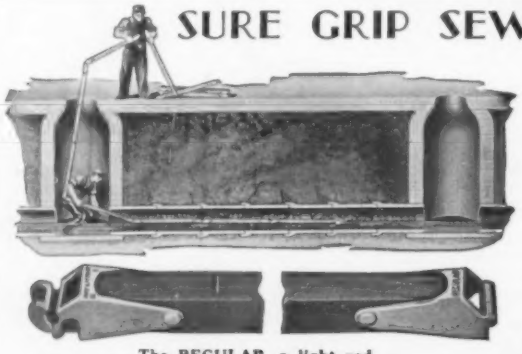

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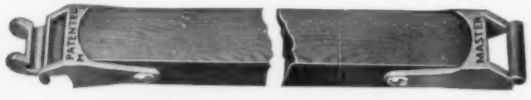


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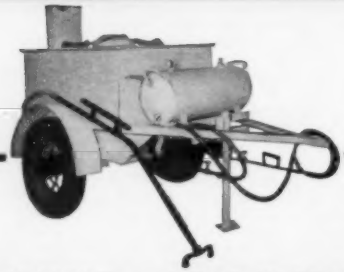

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# Conventions - - When and Where

***Meeting is annual convention unless otherwise designated***

**September 11-12.—Glens Falls, N. Y.**
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Fall meeting. (Hotel Queensbury.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York.

**September 15-21.—Santiago de Chile, S. A.**
PAN AMERICAN CONGRESS OF MUNICIPALITIES. Address: Earl D. Mallery, Exec. Dir., American Municipal Association, 1313 E. 60th St., Chicago, Ill.

***September 15-24.—Mexico City, Mexico**
PAN-AMERICAN HIGHWAY CONGRESS.

**September 18-19.—Santa Fe, N. Mex.**
AMERICAN WATER WORKS ASSOCIATION—ROCKY MOUNTAIN SECTION. (La Fonda Hotel.) Sec., B. V. Howe, State Office Bldg., Denver, Colorado.

**September 18-19.—Mansfield, Ohio.**
OHIO CONFERENCE ON SEWAGE TREATMENT. (Mansfield-Leland Hotel.) Sec., B. M. McDill, Dept. of Health, Columbus, Ohio.

**September 19-20.—Providence, R. I.**
NEW ENGLAND SEWAGE WORKS ASSOCIATION. (Providence - Biltmore Hotel.) Sec. - Treas., LeRoy W. Van Kleeck, State Dept. of Health, Hartford, Conn.

***September 22-24.—Wichita, Kans.**
LEAGUE OF KANSAS MUNICIPALITIES. (Broadview Hotel.) Exec. Sec., John G. Stutz, Lawrence, Kans.

***September 25-25.—Springfield, Ill.**
ILLINOIS ASSOCIATION OF PARK DISTRICTS. (Hotel Abraham Lincoln.) Exec. Dir., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

**September 25-25.—Atlanta, Ga.**
ILLUMINATING ENGINEERING SOCIETY. (Atlanta-Biltmore Hotel.) Gen. Sec., A. D. Cameron, 51 Madison Ave., New York.

**September 25-26.—Boston, Mass.**
NEW ENGLAND WATER WORKS ASSOCIATION. (Hotel Statler.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

**September 24-26.—Grand Rapids, Mich.**
AMERICAN WATER WORKS ASSOCIATION—MICHIGAN SECTION. (Hotel Pantlind.) Sec., M. N. Gerardy, Water Board Bldg., Detroit, Michigan.

**September 24-26.—Owensboro, Ky.**
KENTUCKY MUNICIPAL LEAGUE. (Hotel Owensboro.) Exec. Sec., Carl B. Wachs, Univ. of Kentucky, Lexington, Ky.

**Sept. 27-Oct. 2.—Atlantic City, N. J.**
AMERICAN TRANSIT ASSOCIATION. (Haddon Hall.) Gen. Sec., Guy C. Hecker, 292 Madison Ave., New York.

**Sept. 28-Oct. 1.—Chicago, Ill.**
AMERICAN CEMETERY ASSOCIATION. (Palmer House.) Exec. Sec., Roy Hatten, 408 S. Oak Ave., Oak Park, Ill.

**Sept. 29-Oct. 2.—Detroit, Mich.**
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. (Statler Hotel.) Sec.-Treas., W. C. Markham, 1220 Nat'l Press Bldg., Washington, D. C.

**Sept. 29-Oct. 2.—St. Louis, Mo.**
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. (Hotel Jefferson.) Sec., Irvin Shulsinger, 8 E. 41st St., New York.

**Sept. 29-Oct 3.—Baltimore, Md.**
NATIONAL RECREATION ASSOCIATION. (Lord Baltimore Hotel.) Sec., Howard S. Braucher, 315 Fourth Ave., New York.

***October 3-4.—Boston, Mass.**
MASSACHUSETTS FEDERATION OF PLANNING BOARDS. (Hotel Kenmore.) Sec., Frank H. Malley, 240 Maple Street, West Roxbury, Massachusetts.

**October 3-7.—Chicago, Ill.**
INSTITUTE OF TRAFFIC ENGINEERS. (Hotel Stevens.) Sec.-Treas., W. Graham Cole, 60 John St., New York.

**October 6-9.—New Orleans, La.**
AMERICAN INSTITUTE OF PARK EXECUTIVES AND AFFILIATED ORGANIZATIONS. (Roosevelt Hotel.) Exec. Sec., Will O. Doolittle, Box 422, Tulsa, Okla.

**October 6-8.—Racine, Wis.**
AMERICAN WATER WORKS ASSOCIATION—WISCONSIN SECTION. (Hotel Racine.) Sec., L. A. Smith, City Hall, Madison, Wis.

**October 6-10.—Chicago, Ill.**
NATIONAL SAFETY COUNCIL. M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Illinois.

**October 8-10.—Lincoln, Nebr.**
LEAGUE OF NEBRASKA MUNICIPALITIES. Sec.-Treas., C. E. Beals, 204 Brownell Bldg., Lincoln, Nebr.

**October 9-11.—Minneapolis, Minn.**
AMERICAN WATER WORKS ASSOCIATION—MINNESOTA SECTION. (Nicollet Hotel.) Sec.-Treas., Ronald M. Finch, Wallace & Tiernan Co., Inc., 414 Flour Exchange, Minneapolis, Minn.

**October 9-11.—New York City.**
FEDERATION OF SEWAGE WORKS ASSOCIATIONS. (Hotel Pennsylvania.) Exec. Sec., W. H. Wisely, Box 18, Urbana, Ill.

**October 9-10.—Sioux Falls, S. Dak.**
LEAGUE OF SOUTH DAKOTA MUNICIPALITIES. (Carpenter Hotel.) Sec., A. E. Mead, Univ. of South Dakota, Vermillion, S. Dak.

**October 12-14.—Virginia Beach, Va.**
LEAGUE OF VIRGINIA MUNICIPALITIES. (Cavalier Hotel.) Exec. Sec., Morton L. Wallerstein, 902 Travelers Building, Richmond, Virginia.

**October 12-16.—St. Paul, Minn.**
NATIONAL TAX ASSOCIATION. (Lowry Hotel.) Sec., Raymond E. Manning, Library of Congress, Washington, D. C.

**October 13-16.—Fort Worth, Texas.**
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

**October 13-16.—Sacramento, Calif.**
LEAGUE OF CALIFORNIA CITIES. Sec., Richard Graves, 2121 Allston Way, Berkeley, Calif.

***October 13-14.—Chanute, Kans.**
KANSAS ASSOCIATION OF MUNICIPAL UTILITIES. Sec.-Treas., L. C. Angevine, McPherson, Kans.

**October 13-16.—Atlantic City, N. J.**
NATIONAL ASSOCIATION OF PUBLIC SCHOOL BUSINESS OFFICIALS. (Ambassador Hotel.) Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

**October 14-17.—Atlantic City, N. J.**
AMERICAN PUBLIC HEALTH ASSOCIATION. (Convention Hall and Auditorium.) Exec. Sec., Dr. Reginald M. Atwater, 50 W. 50th St., New York.

**October 15-17.—Chicago, Ill.**
ILLINOIS MUNICIPAL LEAGUE. (Congress Hotel.) Exec. Dir., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

**October 15-17.—Atlantic City, N. J.**
PENNSYLVANIA WATER WORKS ASSOCIATION. (Haddon Hall.) Sec., Dr. F. Herbert Snow, 507 Telegraph Bldg., Harrisburg, Pa.

**October 15-17.—Knoxville, Tenn.**
TENNESSEE MUNICIPAL LEAGUE. Sec., C. C. Gilbert, 1014 Stahlman Bldg., Nashville, Tenn.

**October 16-18.—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION—NEW JERSEY SECTION. (Madison Hotel.) Sec., C. B. Tygert, P. O. Box 178, Newark, N. J.

**October 16-17.—Kitchener, Ont.**
THE CANADIAN INSTITUTE ON SEWAGE AND SANITATION. (Walper House.) Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Toronto, Ontario.

**October 16-17.—Eau Claire, Wis.**
LEAGUE OF WISCONSIN MUNICIPALITIES. (Eau Claire Hotel.) Sec., Frederick MacMillin, 30 E. Johnson St., Madison, Wis.

**October 18.—Morgantown, W. Va.**
LEAGUE OF WEST VIRGINIA MUNICIPALITIES. (City Hall.) Exec. Sec., Hume K. Nowlan, Hinton, W. Va.

**October 19-22.—Jacksonville, Fla.**
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. (Hotel George Washington.) Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

**October 19-22.—Los Angeles, Calif.**
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. (Biltmore Hotel.) Asst. Sec.-Treas., Mrs. Norma McKellops, 1615 H St., N. W., Washington, D. C.

**October 20-22.—Cedar Rapids, Iowa.**
AMERICAN WATER WORKS ASSOCIATION—MISSOURI VALLEY SECTION. (Montrose Hotel.) Sec., Earle L. Waterman, Univ. of Iowa, Iowa City, Iowa.

**October 22-24.—Nashville, Tenn.**
AMERICAN COUNTRY LIFE ASSOCIATION. Exec. Sec., Benson Y. Landis, 297 4th Ave., New York.

**October 22-24.—Chicago, Ill.**
THE AMERICAN MUNICIPAL ASSOCIATION. Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

**October 22-25.—Fresno, Calif.**
AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. (Fresno Hotel.) Sec., Gerald E. Arnold, San Francisco Water Dept., Millbrae, Calif.

**October 26-29.—New Orleans, La.**
AMERICAN PUBLIC WORKS ASSOCIATION. (Roosevelt Hotel.) Acting Exec. Dir., Norman Hebden, 1313 E. 60th St., Chicago, Ill.

**October 27-29.—Nashville, Tenn.**
AMERICAN WATER WORKS ASSOCIATION—KENTUCKY-TENNESSEE SECTION. (Andrew Jackson Hotel.) Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

***October 30-31.—Roanoke, Va.**
AMERICAN WATER WORKS ASSOCIATION—VIRGINIA SECTION. (Hotel Roanoke.) Sec., N. Phillips, Jr., 119 State Office Bldg., Richmond.

**Oct. 30-Nov. 1.—Morgantown, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. (Hotel Morgan.) Sec., John B. Harrington, State Dept. of Health, Charleston, W. Va.

**November 3-5.—High Point, N. C.**
Joint meeting. (Hotel Sheraton.) AMERICAN WATER WORKS ASSOCIATION—NORTH CAROLINA SECTION AND NORTH CAROLINA SEWAGE WORKS ASSOCIATION. Sec., R. S. Phillips, Box 1170, Durham, N. C.

**November 3-4.—Pittsburgh, Pa.**
ENGINEERING SOCIETY OF WESTERN PENNSYLVANIA. (William Penn Hotel.) Gen. Chairman, H. M. Olson, 171 Longue Vue Drive, Mt. Lebanon, Pittsburgh, Pa.

**November 3-7.—Temple, Texas.**
LEAGUE OF TEXAS MUNICIPALITIES. (Kyle Hotel.) Exec. Sec., E. E. McAdams, 2225 Guadalupe St., Austin, Texas.

**November 6-7.—Baltimore, Md.**
AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Sec., Lloyd Nelson, U. S. Pipe & Foundry Co., Broad and Chestnut Sts., Philadelphia, Pa.

***November 13-14.—Atlantic City, N. J.**
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Exec. Sec., James J. Smith, 808 Trenton Trust Bldg., Trenton, N. J.

**November 25-27.—Hollywood, Fla.**
INTERNATIONAL CITY MANAGERS' ASSOCIATION. (Hollywood Beach Hotel.) Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

***December 1, Week of.—Washington, D. C.**
HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL. Dir., Roy W. Crum, 2101 Constitution Ave., Washington, D. C.

***December 1-2.—Philadelphia, Pa.**
SYMPOSIUM. TAX INSTITUTE. Exec. Sec., Miss Mabel L. Walker, 135 S. 36th St., Philadelphia.

* First appearance of notice on this page.

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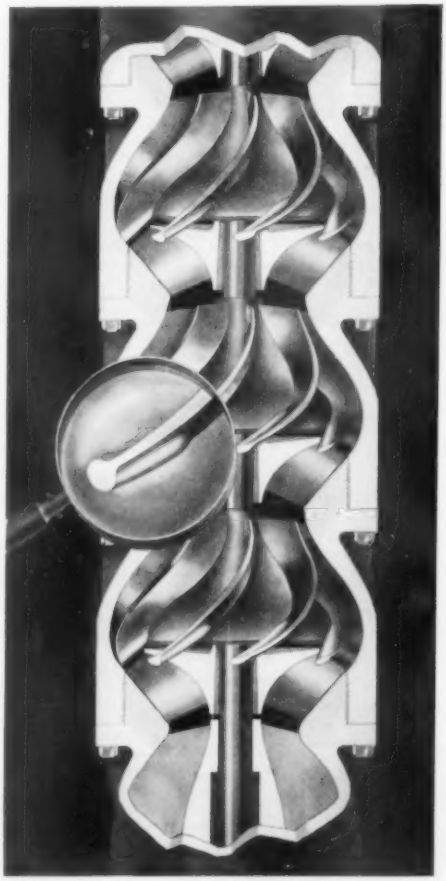
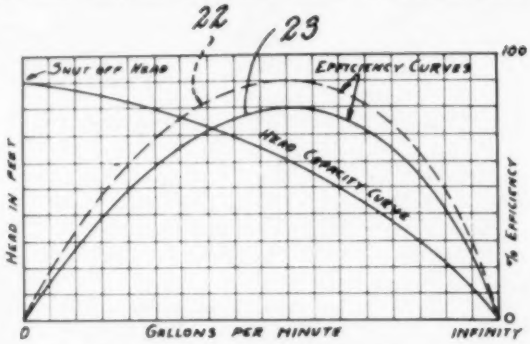


Cutaway section of new Pomona pump bowl assembly, showing "bulbous vanes."

Flow pattern of liquids around "bulbous vanes" free from friction and turbulence.

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# Municipal and Civic Publications

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## Water Purification

*Factors Affecting the Germicidal Efficiency of Hypochlorite Solutions.—By A. S. Rudolph, Head, Department of Science, Bethel College, and Max Levine, Research Professor of Bacteriology, Iowa Engineering Experiment Station. The Iowa State College Bulletin, Ames, Iowa. Bulletin 150, July, 1941. 48 pp. Free.*

Conflicting results have been reported on the efficiency of chloramines and hypochlorites as disinfectants. This bulletin is the second of a series on factors affecting the germicidal efficiency of chlorine compounds, the first being "Germicidal Properties of Chlorine Compounds," by David Charlton and Max Levine, which was published in 1937. This bulletin reports results of a study of the effects of temperature, concentration, and reaction (pH) on germicidal efficiency of calcium hypochlorite, by determining the course of disinfection and the time required to effect a reduction of 99 per cent in the number of viable spores of Bacillus metiens.

## Swimming Pool Sanitation

*Keeping the Pool Safe and Sanitary.—Published by The Mathieson Alkali Works (Inc.), 60 E. 42d St., New York. 1941. 42 pp. Free.*

The essentials of a modern pool sanitation program, embracing every part of the premises from "entrance-to-exit," including locker-rooms, shower-rooms, toilets, walkways, diving boards, ladders, floats, sand beaches, towels, suits, and fungicidal footbaths. The use of Sanitation H T H in this process is described. The four main chapters discuss keeping the pool water safe, controlling algae growths, maintaining proper alkalinity or pH, and guarding against athlete's foot.

## Improving Labor Relations

*How to Stop Strikes—A broadcast over the red network of the National Broadcasting Co., July 18, 1941.—By Albert W. Hawkes, President, Chamber of Commerce of the United States, John Q. Carey, Mayor, Toledo, Ohio, and Edmund Ruffin, Director, Toledo Industrial Peace Board. Chamber of Commerce of the United States, Washington, D. C. 12 pp., 5¾ x 7 in.*

As an informal discussion among the three speakers, this broadcast presents the strike-prevention plan advocated by the Chamber of Commerce of the United States, and an account of the operation of a similar plan already in action—that of the successful Toledo Industrial Peace Board.

## New York Defense Councils

*Manual for Local Defense Councils.—New York State Council of Defense, Albany, N. Y. 1941. 49 pp.*

This is a complete guide to the purpose and function of local defense councils in New York State, embracing organization and cooperation with other agencies, and activities in connection with defense production, civilian defense, and community services. Listed in the appendix are state agencies and departments engaged in defense activities, local councils in the state, district mobilization coordinators, and the legislation setting up the councils.

## Decentralization

*Corporate Limits and Fringe Dwellers.—Address delivered by J. Herbert Meighan, Chairman, Gadsden City Commission, at the Dothan Convention, Alabama League of Municipalities, July 10, 1941. Apply to the League, 6-7-8 Tyson Bldg., Montgomery, Ala. 6 pp. Free.*

Summary analysis of the city problems attendant upon decentralization, with a consideration of their prevention and solution by annexation.

## Street Paving

*Recently received publications from The Asphalt Institute, 801 Second Ave., New York, include:*

*Specification for Asphalt Enamel Protective Coatings for Steel Water Pipe.—Number 55, Construction Series. Adopted by The Asphalt Institute, Jan. 29, 1941. 7 pp.*

*Classifications of Stabilization and the Elements of Expense in a Typical Asphalt Stabilization Project.—By W. R. Macatee, Managing Director, The Asphalt Institute. Revised Paper Presented at Soils Stabilization Symposium Held at The Virginia Military Institute, Lexington, Va., Mar. 26, 1941. 10 pp.*

*The Significance of Various Methods of Tests Used on Asphaltic Paving Materials.—Number 6, Research Series, Prepared by The Technical Advisory Committee, The Asphalt Institute. 1941. 8 pp.*

*A Direct Method of Determining Thickness of Asphalt Pavement with Reference to Subgrade Support.—By Prevost Hubbard, Chemical Engineer, The Asphalt Institute, and Frederick C. Field, Chemist, The Asphalt Institute. Paper Presented at the Thirteenth National Asphalt Conference at Dallas, Texas, Dec. 11, 1940. 12 pp.*

*Required Thickness of Asphalt Pavement in Relation to Subgrade Support.—By Prevost Hubbard, Frederick C. Field, Chemical Engineer and Chemist, respectively, The Asphalt Institute. 1941. 8 pp.*

## Tax Delinquency and Decentralization

*A Study of Problems Contributing to Tax Forfeiture, Tax Delinquency and Depreciation of Business Real Estate Values in Saint Paul with Suggestions for Probable Remedies.—Prepared by Mayor's Committee on Tax Forfeiture, St. Paul, Minn. 1941. 37 pp., mimeo.*

This is another of the increasing number of studies and reports on the related subjects of decentralization of cities, lowering of property values in the center of the city with increase of tax delinquency, city government costs increased to pay for suburban services, acute parking problems, etc. This study analyzes the situation in St. Paul, with supporting figures, and lists proposed remedies.

## Health

*Physical Fitness—Springfield College Studies, Division of Health and Physical Education.—Supplement to the May, 1941, issue of The Research Quarterly, published by the American Association for Health, Physical Education, and Recreation. 493 pp. $1.00, paper cover; $1.75, cloth cover.*

This publication is of particular interest because of the relation of the physical fitness of young men being taken into military service, to the defense program. A compilation and interpretation of research and literature in the field, it discusses the relation to general physical fitness of various factors, such as weight, posture, strength, motor fitness, fatigue, mental hygiene.

## Health District History

*Forward to Health—The Story of Ten Years in Westchester's Program for a Healthier Community. The Westchester County Department of Health, White Plains, New York. 1941. 71 pp.*

Before 1930, Westchester County had 43 separate local health officers. In 1930, the Westchester county health district—which now includes 41 cities, towns and villages—was created, coordinating these separate efforts. The story of the evolution of the health district during its first decade is told here graphically and dramatically, in a rather unusual organization of subject matter, based on popular interest.

## Refuse Collection Practice

*Municipal, Contract, or Private Collection of Refuse.—American Public Works Association, 1313 E. 60th St., Chicago, Ill. 1941. 33 pp. 50c.*

This is the preliminary edition of Chapter XI of the volume, "Refuse Collection Practice," now in preparation. Based on practices of nearly 200 cities, of which 35 were visited for the purpose, it describes the present use of the three methods of collection—municipal, contract, and private; and trends in present practices. Advantages and disadvantages of each type of collection are analyzed in detail.

## Traffic Safety Program

*Priority for Traffic Safety.—Automotive Safety Foundation, Tower Bldg., Washington, D. C. 1941. 53 pp.*

With the theme that safe, free-flowing traffic is vital to national defense, this magazine-styled pamphlet tells with action photographs and cartoons what is being done by the automotive industry in coordinating the attack on the problem of street and highway safety, under the Standard Highway Safety Program for States, which is endorsed by 50 national organizations. Today's traffic picture is reviewed; specific problems are pointed out; and action being taken to solve them is described, in popular style.

## Post-Defense Planning

*After Defense—What?—National Resources Planning Board, Washington, D. C. 1941 19 pp.*

Objectives and programs for post-defense America—for retaining full employment while shifting some 25,000,000 men from defense to peacetime activities—are outlined briefly in an analysis of this huge national problem. Post-war plans to be explored and developed are seven: plans for demobilization; for public works and activities; with industry; to expand service activities; for security; for financing; in the international scene. (For further discussion of this pamphlet, see p. 48 of this issue.)

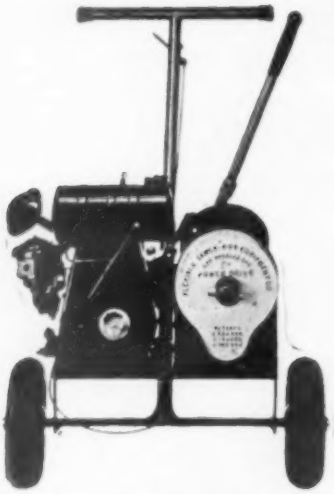
## Planning Conference

*National Conference on Planning—Proceedings of the Conference held at Philadelphia, Pa., May 12-14, 1941. American Society of Planning Officials, 1313 E. 60th St., Chicago, Ill. 357 pp.*

The published proceedings of the national planning conference contain more than half again as many pages as those of last year. Reflecting the broad fields of planning interests of the four participating national planning organizations—The American Institute of Planners, The American Planning and Civic Association, The American Society of Planning Officials, and The National Planning Association, they contain talks given and discussions held at sessions on: land planning; industrial locations; planning as an administrative process; defense production and post-defense planning; agricultural planning; housing and planning; public improvements; state and local planning boards and defense; proposals for rebuilding cities; Philadelphia's planning problems; zoning; and regional planning. ASPO committee reports are also included.

## Defense Bibliographies

*The following six mimeographed bibliographies on the subject of municipal defense, each divided under sub-headings, have been compiled by the Municipal Reference Library, Los Angeles, Calif.: Air Raid Shelters, 8 pp.; Defense Planning for Local Governments, 3 pp.; Public Protection in Defense Plans, 4 pp.; Health in a National Defense Program, 20 pp.; The Protection of Electric and Water Utilities During Wartime, 4 pp.; Recreation and National Defense, 3 pp.*



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## Municipal Accounting Development

*Municipal Accounting Forty Years After.—By Thomas H. Reed, Municipal Consultant, Writer and Lecturer. An Address before the Municipal Finance Officers Association of the U. S. and Canada, Louisville, Ky., May 21, 1941. Apply to the Association, 1313 E. 60th St., Chicago, Ill. 7 pp.*

An over-all picture of the strides that municipal accounting has made in the last 40 years is sketched here, with a review of present needs for improvement in this field. The latter include the need for a good budget system in more cities, the need for the adoption of standard practices, for comparative data between cities, for employing trained graduates, applying already well-known principles, and educating the man in the street.

## Accounting

*Municipal Accounting Statements.—Bulletin No. 12, National Committee on Municipal Accounting, 1313 E. 60th St., Chicago, Ill. Revised Edition. 1941. ix + 206 pp. $2.00.*

The four chapters of this book are: The Preparation of Municipal Accounting Statements; The Report; A Discussion of Each Fund and Its Statements; Municipal Accounting Terminology. The first edition was published in 1936. Revisions in this volume, made with the help of suggestions of readers of the first volume, include a greater emphasis on the importance of the financial report and its relationship to fund accounting, budgeting, and classification of accounts. Two added appendices contain forms for financial statements prepared *during* the fiscal period, and a summary of accounting principles.

## Township Commissioners' Problems

*Township Commissioners Yearbook, 1940.—Pennsylvania State Association of Township Commissioners. Edited and Published by the Pennsylvania Government Administration Service, 34 Blanchard Hall, 36th and Walnut Sts., Philadelphia, Pa. 123 pp., photo offset. $1.00, limited number.*

Proceedings of the annual convention of Pennsylvania officials of townships of the first class are published here for the first time. They cover four articles on planning and zoning, and others on garbage and refuse collection, fire service, municipal finance, and legislation. Listed in the yearbook, as well, are officials, statistical data on the size and finances of Pennsylvania townships, and on township highways.

## Publicity

*Photographs—And How to Use Them.—By David Turteltaub, Ph.D. Social Work Publicity Council, 130 E. 22d St., New York. 1941. 32 pp. 75c.*

A compelling set of photographs illustrates this practical manual written not on the common theme of how to take photographs, but on how to use them, their psychology and social content. It tells how to use photographs not just to gain attention, but to put across an idea and tell a story. The discussion covers pictures as symbols, pictures that keep confidences between agencies and individuals, pictures of individuals who represent groups, how to photograph intangibles, how to tie pictures together with a theme. Forms of release for pictures and a bibliography are included.

## Civil Service Procedure

*Manual of Procedure for Municipal Civil Service Commissions.—Prepared by Members of the New York State Department of Civil Service. Published by New York State Conference of Mayors and Other Municipal Officials, Bureau of Training and Research, Albany, N. Y. 1941. 111 pp. $1.50.*

An analysis of the organization of the municipal civil service commission in New York State, and of all aspects of the procedure for established personnel functions, with a discussion of additional functions now assumed by progressive civil service commissions, including probation, training, public reporting, etc. Numerous forms and schedules are reproduced.

## Defense Housing

*Homes for Defense—A Statement of Function. Division of Defense Housing Coordination, Office for Emergency Management, Executive Office of the President, Washington, D. C. 1941. 35 pp.*

A brief statement of the work of the Division of Defense Housing Coordination, and its relation to other housing agencies. The way in which the housing needs in a typical defense community are analyzed and tackled by the Division are graphically related.

*Guide to the Organization and Operation of Homes Registration Offices.—Division of Homes Registration, Division of Defense Housing Coordination, Office for Emergency Management, Executive Office of the President, Washington, D. C. Revised, 1941. 44 pp.*

Homes registration offices are being established in defense communities throughout the nation, with the aid of the Division of Homes Registration of the Division of Defense Housing Coordination described in the publication listed above. Their object is to make available to defense workers listings of all vacant dwellings and rooms in defense areas, and to furnish information to appropriate authorities on housing conditions, shortages and needs in these areas. This broad general guide to the establishment of homes registration offices outlines their purpose, organization and operation; and presents recommendations for the office staff, methods of collecting information on and keeping records of vacancies, placement of applicants for dwelling accommodations, reporting, and publicity. Instructions and forms are reproduced.

## British Local Government

*N.A.L.G.O. in War Time, 1940.—NALGO Centre, Croyde, Braunton, North Devon, England. 1941. 179 pp.*

Containing Reports, Financial Statements, and Balance Sheets for 1940, this publication reviews war-time and normal activities of local English officials last year. (For excerpts from the report, see p. 69 of this issue.)


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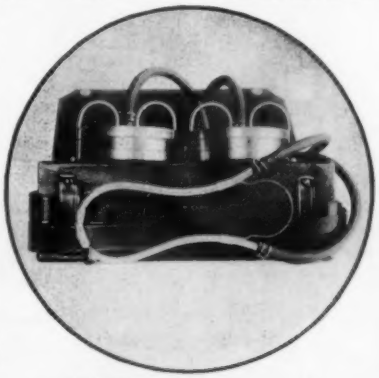

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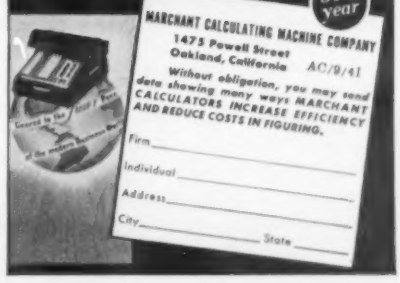

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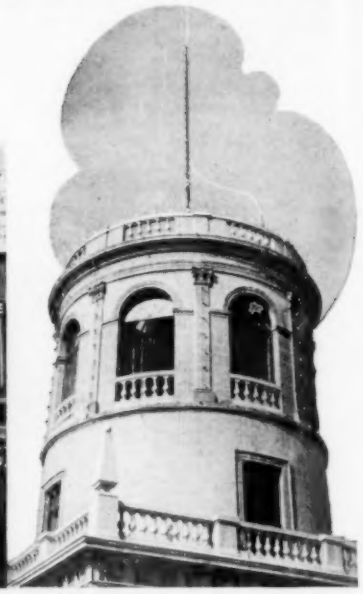
*Major Basail at the controls of the Ultra High Frequency Western Electric radio transmitter at headquarters.*



*Antenna atop Mexico City's famous Palace of Maximilian where the 500 watt UHF transmitter is installed.*

Western Electric Police Radio is giving added protection to 45,000,000 people.

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## Public Personnel Systems

*Merit System Installation—Problems and Procedures in Establishing a Public Personnel Agency.—By Members of the Staff of Public Administration Service, 1313 E. 60th St., Chicago, Ill.* 1941. 58 *pp.* $1.50.

There has been a tremendous increase in the number of merit systems established in recent years: more than 500 such systems have been established in cities, counties and states between 1930 and 1940. Not attempting to cover all the details of technical and operating aspects, this bulletin gives suggestions for installing a public personnel agency, based on actual experience. It takes up: the basic law; establishing and sustaining good-will; organization of the department; administrative rules; position-classification plan; pay plan; recruitment and examinations; operation.

## Safety

*On the Safe Side.—Bulletins of Education, Offices and Testing Stations, Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago, Ill.* 1941. *Free.*

Thirteen weekly radio broadcasts were presented by WCFL (Chicago) in collaboration with Underwriters' Laboratories, on the subject of safety to the citizen. In the form of forums, by experts, they cover safety from fire, accident, crime, explosion and other dangers. Each has been published in a separate illustrated, 10-page pamphlet: Underwriters' Laboratories, Inc.; Automotive Safety; Labor Saving Electrical Devices; How Fire Defenses of Buildings Prevent Conflagrations; The House of Safety; How Fire Resistive Construction Helps Fire Fighting; Burglary and Robbery Protection for Banks and Other Premises; Safe Handling of Gasoline, Fuel Oil, and Other Petroleum Products; How to Extinguish Fire; Safeguarding Electrical Installations; Safeguarding Radios and Allied Equipment; The Place of Chemistry in Fire and Accident Prevention; Protection Against Lightning.

## Cleveland Planning

*Decentralization—A Problem in Cleveland's Future.—A Report Prepared for the Cleveland Chamber of Commerce, by L. S. Robbins, Manager, Construction Industries Department, Cleveland, Ohio.* 1941. 38 *pp.*

Analysis of the phenomena and effects of decentralization in Cleveland are accompanied in this report by an appraisal of planning and planning agencies in the city, a listing of other disadvantages besides decentralization resulting from ineffectual planning, and conclusions and recommendations for future planning in the area.

## Port Development

*The Port of New York.—The Port of New York Authority, New York.* 1941. 95 *pp.*, 10 *by* 13 *in.*

The stirring drama of the New York waterfront is recreated in this spectacularly illustrated account of two decades of progress of the Port of New York—port of many ports, and America's largest. The scope of the report is broad, covering in non-technical language many projects and improvements outside the sphere of the Authority. A brief Saga of the Port is followed by a description of the individual ports of which it is composed; a brief discussion of the advantages of the Port; an account of improvements since 1917; and a readable description of the work of the Authority.

## City Land Use

*Outline of Proposed Land Use Policies.—City Planning Commission, Syracuse, New York.* 1941. 7 *pp., mimeo.*

An informal, question-and-answer discussion of land-use problems in Syracuse, and the City Planning Commission's proposed policies toward them, is outlined here. Under the main headings of People, Open Spaces, and Real Estate, such common urban problems as decentralization, population density, public- and privately-owned spaces, and properties delinquent in taxes are briefly reviewed.

## Pan-American Cities

*Minutes of the Second and Third Meetings of the Executive Committee of the Pan-American Commission on Intermunicipal Cooperation, Havana, Cuba, Oct. 2, 3 and 4, 1940, and Jan. 24 and 28, 1941.— Pages 13-24, and 11-21, of Boletins de la Comision Panamericana de Cooperacion Intermunicipal, Octubre, Noviembre, Diciembre de 1940, and Enero, Febrero, Marzo, Abril de 1941, respectively. Apply to Director of the Commission, Dr. Carlos M. Morán, Obispo, 551.*

Contains (in English) reports by the Secretary of the Commission, and discussions of the proposed survey of the municipalities of the Americas, plans for the Second Pan-American Congress of Municipalities, and various matters of organization and personnel of the Commission.

## Los Angeles Master Plan

*A limited supply of the following two parts of the Los Angeles County Master Plan are available from The Regional Planning Commission, 205 S. Broadway, Los Angeles, Calif.: Master Plan of Land Use Inventory and Classification, County of Los Angeles, Regional Planning District,* 1941. 110 *pp.*

An inventory and classification of eight existing land uses in the Los Angeles region—residence, commerce, industry, utilities, institutions, recreation, open space, and agriculture. Underlying trends and natural laws which govern land uses in the region are indicated, and probable future urban land-use requirements, based on population estimates, are outlined.

*Master Plan of Highways, County of Los Angeles, Regional Planning District, Volume I,* 1941. 95 *pp.*

Analyzed in this report are the number, location, and kind of highways that are needed for Los Angeles County, with a chapter on the means of carrying out the plan. A second volume will present a detailed program for the latter.

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## Other Reports Received

ALLIANCE, NEBR.—Annual Report, City Manager, 1940. 45 pp.

ASHEVILLE, N. C.—Report of the Real Property Survey, 1939-1940. 43 pp. $1.00.

CHICAGO, ILL.—Report of the Comptroller, 1940. Department of Finance. 150 pp.

CONCORD, N. C.—Report of the Low-Income Housing Area Survey. Work Projects Administration. Sponsored by City of Concord and North Carolina State Planning Board. 1940. 20 + vii pp.

DES MOINES, IOWA.—Annual Report, City Plan and Zoning Commission, 1940-1941.

MICHIGAN.—"Cooperation Beats Any Problem." —Description of the Michigan Municipal League and Its Activities. Apply to the League, 205 S. State St., Ann Arbor, Mich. 1941. 22 pp., 4 by 8 in.

MILWAUKEE, WIS.—Planning Laws Under Which the Board of Public Land Commissioners Functions. 1941. 20 pp.

JACKSON, MISS.—Quarterly Progress of Civic and Financial Affairs, Quarter Ending June 30, 1941. 44 pp.

MONTREAL, CANADA.—Financial Statement and Assessments, 1940. The Montreal Metropolitan Commission. 41 pp.

NEW YORK, N. Y.—"Better Housing Through Sound City Development," Annual Report, Year Ending Apr., 1941, Citizens' Housing Council of New York, Inc., 470 Fourth Ave. 6 pp., 3¾ by 8¾ in.

ROCHESTER, N. Y.—"Our City," Annual Report, 1940. 32 pp.

SANDWICH, MASS.—Annual Report, Selectmen and Other Town Officers, 1940. 114 pp.

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"Four Problems of Local Boards of Finance, Including That of Surplus and Reserves." —A Paper Presented at The University of Connecticut, July 29, 1941. By Roger S. Baldwin, Member of Board of Estimates and Taxation, Greenwich, Conn.

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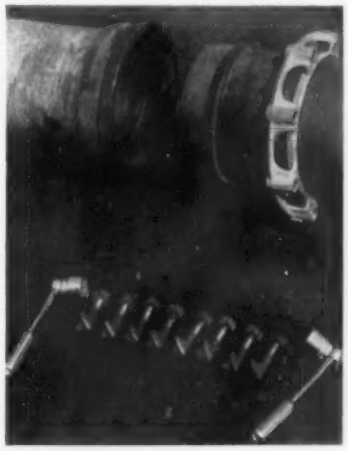

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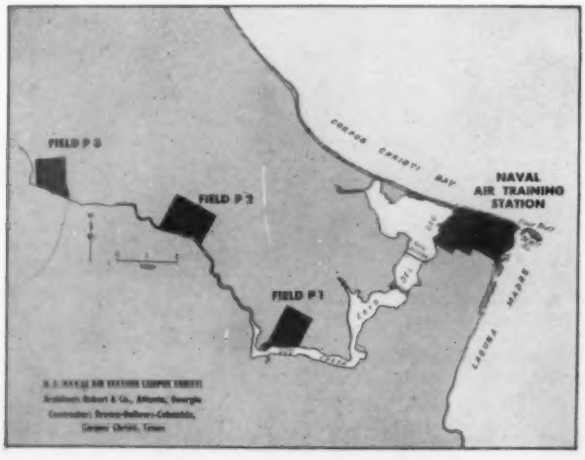


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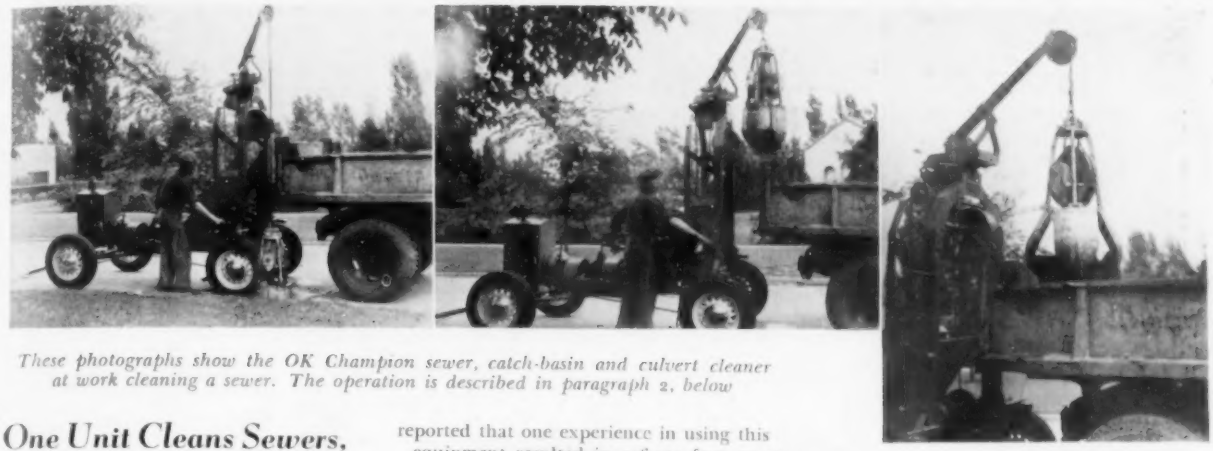
# News and Illustrations

**Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings**



*These photographs show the OK Champion sewer, catch-basin and culvert cleaner at work cleaning a sewer. The operation is described in paragraph 2, below*

## *One Unit Cleans Sewers, Catch-Basins, Culverts*

Not only has the job of cleaning city sewers become, with the new equipment now available, a much easier one than it used to be; but, in addition, it is now possible to use a single unit for performing the allied operations of sewer-cleaning, catch-basin cleaning, and culvert-cleaning—thus keeping the entire sewer system in good condition year after year. The methods by which the OK Champion combination sewer, catch-basin, and culvert cleaner does these three distinct but related jobs are described below, from information furnished by the manufacturers.

In the sewer-cleaning phase of the work, illustrated above, it is reported that 800 to 1,500 feet of anything from 6-inch to 6-foot sewer per day may be thoroughly cleaned as a routine job, with the cost ranging from 3 to 7 cents per lineal foot. Three men comprise the entire crew for operating the equipment. One machine with two drums perfectly synchronized carries the expanding excavating bucket down around the trolley wheel in the manhole for its bite into the débris. In three or four feet of travel it may pick up a full load, and it is then withdrawn and brought around the trolley wheel up through the manhole to the boom at the top of the machine, whence it is readily emptied onto the street or into containers. There is nothing further to be done but to haul it away.

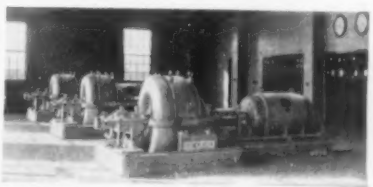
As the bucket travels about 150 feet per minute in normal operation, the job is quickly done. In very congested traffic conditions where the return cable above the pavement as shown might be objectionable, two separate units, identical except for the fact that only one drum is employed on each, can be stationed at the two manholes, one at either side of the section being cleaned. It is reported that one experience in using this equipment resulted in 116,000 feet, or 22 miles, of sewer being cleaned at a cost of 2¾ cents per foot.

For its second cleaning operation, the OK Champion unit is taken from catch-basin to catch-basin. The cover is removed, the clutch released, and the orange-peel bucket lowered to the bottom of the basin. Then the clutch is thrown in, the full bucket lifted, slung over on the rotating boom and emptied directly into a truck or container or onto the street if desired. A few bucketsful empties the catch-basin, and the unit moves on to the next one.

While culvert and highway bridges are perhaps not the worry to municipal officials that they are to the State Highway Department, nevertheless they must be kept clean and free-flowing. The same unit that does the two jobs described above is applied to culvert-cleaning with equal efficiency. The same type of bucket is employed as in the sewer-cleaning process. By means of a simply-installed idler wheel at the far end of the culvert for the return cable to travel over, and the double trolley wheel at the machine end of the culvert, the OK Champion does the work quickly and thoroughly; and again the residue may be disposed of by emptying at the side of the road, into containers, or into the truck that accompanies and pulls the equipment.

Highly satisfactory experience with OK Champion cleaning equipment by such cities as New York; Cincinnati, Akron and Toledo, Ohio; Flint and Bay City, Mich.; Little Rock, Ark.; Green Bay, Wis.; and Atlantic City, N. J., is reported by the manufacturers. This equipment is offered on a ten-day free trial period, so that a final decision may be made under local conditions. The manufacturers will be glad to send complete information and quotations from their home office, Champion Corporation, 4716 Sheffield Avenue, Hammond, Ind.

**Federation of Sewage Works Associations**
**Annual Convention**
**October 9-11 New York City**
**Equipment Show, Hotel Pennsylvania**

AIR *for the Bacteria*

The Back River Sewage Treatment Station of the City of Baltimore requires large quantities of compressed air continuously to activate the sludge in the aeration tanks where organic matter is broken down by bacterial action.

To supply this air three motor-driven

**DE LAVAL TWO-STAGE COMPRESSORS**

have been installed, each rated at 16,500 cu. ft. of air per min. against 7.5 lb. per sq. in. discharge pressure with 3 in. water column suction.

De Laval centrifugal blowers and compressors are built for all capacities, for all pressures up to 100 psi. and for motor or steam turbine drive.

Ask for Catalog F-3823

**DE LAVAL**
**STEAM TURBINE CO.**
**TRENTON, N. J.**

POLICE PROTECTION

FIRE PROTECTION

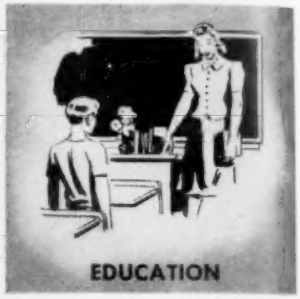
HEALTH PROTECTION

TRANSPORTATION

# NATIONAL DEFENSE IMPOSES ADDED RESPONSIBILITIES ON EVERY MUNICIPAL ACTIVITY

•

**Modern accounting will help you control the cost of increased municipal service**


EDUCATION

RECREATION

Hundreds of communities are finding it difficult to bear the additional expenses and responsibilities imposed upon them by expanded local industries or other defense activities.

Since further taxation is sometimes difficult, many municipalities are tightening up by adopting a more efficient tax billing and collection plan; by installing a budgetary plan that provides a better control of costs, expenditures and commitments in each department.

For many years Burroughs has made an intensive study of municipal accounting—has developed many new and modern machines and methods for handling today's municipal problems in less time, with less effort, at less expense. For complete information, mail the coupon or get in touch with the local Burroughs office.

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6669 Second Avenue, Detroit, Michigan

**New and Timely Information on These Subjects Now Available**
***Yours for the Asking***

TAX ACCOUNTING . . . ☐
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**Burroughs**
DOES THE WORK IN LESS TIME • WITH LESS EFFORT • AT LESS COST

## *Guy Kelcey President of Vehicular Parking, Ltd.*

Signal Service Corporation, Elizabeth, N. J., announced last month the resignation of Guy Kelcey, who has been its Sales Manager since it was organized in 1931, and prior to that Manager of the Traffic Engineering Division of the American Gas Accumulator Co., with which Signal Service is associated. Charles F. Post, who has served both companies in a number of capacities for twenty years, will succeed to the position of Sales Manager. Mr. Post is widely known among public officials responsible for traffic, and brings to his new work a wealth of knowledge in traffic work.

Mr. Kelcey is now President of Vehicular Parking, Ltd., 1060 Broad Street, Newark, N. J., a corporation that holds numerous patents covering parking meters, and under which the principal manufacturers of the parking-meter industry are licensed. In addition to administrative duties, Mr. Kelcey will be responsible for the orderly development of metered parking and for research and expansion into allied fields.

## *Portable Emergency Unit for Sterilizing Mains*

To assure a supply of safe water in emergencies which may have disrupted the regular water-treatment facilities, or which require the use of temporary water-supply sources, a number of self-powered mobile chlorinating units of a capacity sufficient to meet the demands should be maintained ready for immediate service by any municipality. At the Toronto convention of the American Water Works Association, Wallace & Tiernan Co., Inc., Newark, N. J., exhibited a self-powered mobile trailer unit which provides unusually flexible control of the chlorine dose.

The water intake for the pump installed on the chlorinator and driven by the Aurora 1-inch pump installed on the chlorinator, powered with a Wisconsin engine, is located conveniently so that a long suction hose may be attached. The unit is equipped with a Type MSDV chlorinator, metered to supply 100 pounds of chlorine in 24 hours; but larger meters may be installed as required.

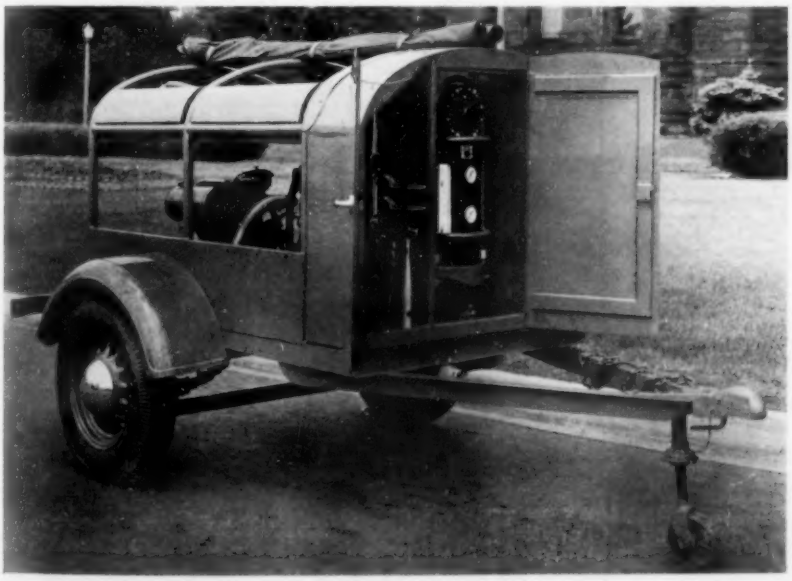
The coils of hose are carried under a tarpaulin cover in metal trays over the unit, and tarpaulin covers are also provided for the sides and back of the unit, to protect it from the weather. The front of the chlorinator unit is enclosed with metal doors, one over the chlorinator itself and one on either side over compartments for tools and chlorinator supplies.

Two chlorine cylinders are carried in cradles on this unit on either side of the pump. These 100-pound cylinders come out on rollers, and are held in place by an easily-operated but dependable latch; and, as a secondary defense, the bumper, unless moved up out of the way, also acts to prevent the cylinders from sliding out of their cradles.

## *Brooks Co. Announces Election of New Officers*

Following the death, on July 21, of Wallace Brooks, President of Brooks Equipment & Mfg. Co., Knoxville, Tenn., the following officers of the company were elected at a recent meeting: E. N. Brooks, President and General Manager; Karl R. Martin, Executive Vice-President and Treasurer; R. S. Tucker, Vice-President in Charge of Sales; Dorothy Brooks Kirby, Secretary; and Richard G. Howes, Assistant Secretary and Treasurer.

E. N. Brooks, a brother of Wallace Brooks, was formerly Executive Vice-President and General Manager of the company, and had been associated with his brother in business since 1924.



*The W&T Self-Powered Mobile Trailer Unit for Emergency Chlorination*

A NEW *Economical*

**PORTABLE FIRE PUMP**

- *Do you know its name?*
- *What it will do?*
- *How soon it is available?*

Ask us for a practical description of this remarkable economical emergency fire pump.

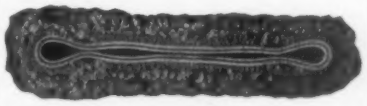
With this *NEW* economical light-weight portable fire pump you can make immediate use of *any* water otherwise inaccessible without this pump. It gives you the jump on those outlying fires.

*Don't wait until you must have it, find out from us—*

*NOW!*

**GRIFFIN WELLPOINT CORP.**
729 E. 140th St., New York, N. Y.
Phone MElrose 5-7704-5

**WHY—**



The above illustration shows the position of the rubber lining in

**Bi-Lateral Fire Hose**

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

*—Also—*

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction, cheaper than one priced at $7,000 when loaded with other construction.

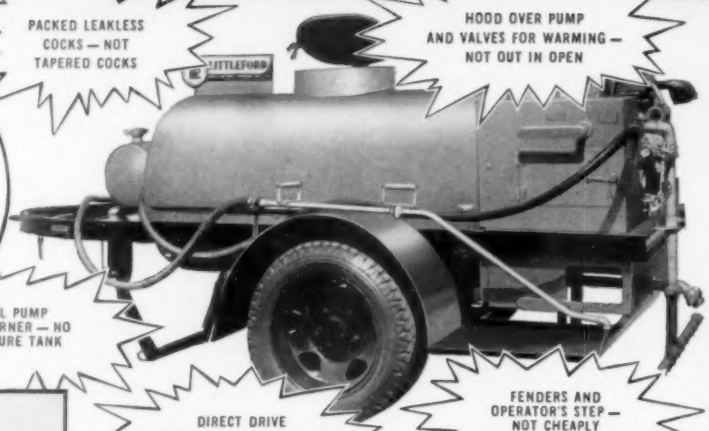
**BI-LATERAL FIRE HOSE CO.**
20 N. Wacker Drive, Chicago, Illinois

## LET'S POINT OUT A FEW REASONS WHY THE NO. 101 UTILITY SPRAY TANK IS BETTER

When you get features that make a unit more efficient, more modern in its operation, sturdier in construction, and painstaking in design, you have the best. The Littleford Model No. 101 Utility Spray Tank gives you just that. Where else can you find the exclusive features as shown here. Compare the Model No. 101 with similar units and see for yourself.

PACKED LEAKLESS COCKS — NOT TAPERED COCKS

HOOD OVER PUMP AND VALVES FOR WARMING — NOT OUT IN OPEN




FUEL PUMP FOR BURNER — NO PRESSURE TANK

DIRECT DRIVE FROM ENGINE TO PUMP — NO CHAIN DRIVE

FENDERS AND OPERATOR'S STEP — NOT CHEAPLY CONSTRUCTED

BLACK TOP ROAD MAINTENANCE EQUIPMENT — LB — SINCE 1900

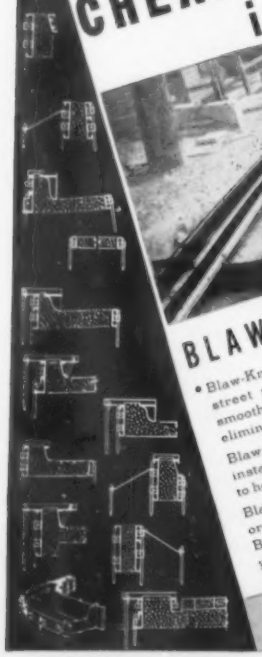
**LITTLEFORD**

Littleford Bros.
500 E. Pearl St., Cincinnati, Ohio

## CHEAPER than wood in the long run

*Always ready for action to build . . .*

- Combined Curb and Gutter
- Straight or Battered Curbs
- Integral Curb
- Any shape of Curb Face
- Sidewalks, etc.



### BLAW-KNOX STEEL FORMS

• Blaw-Knox STEEL STREET FORMS will do your street paving work quicker and cheaper. The smooth steel imparts a smooth finish to the concrete, eliminating hand finishing.

Blaw-Knox Forms are built for long service; quick installation and dismantling; and are rigidly braced to hold their position when being filled with concrete.

Blaw-Knox Catalog No. 1527 shows how any design or cross section of work can be accommodated with Blaw-Knox Steel Street Forms. We'll gladly send you a copy.

**BLAW-KNOX**

BLAW-KNOX DIVISION of Blaw-Knox Co.
FARMERS BANK BLDG., PITTSBURGH, PA.

34

BLAW-KNOX BINS AND BATCHERS • ROAD FORMS • STREET FORMS • CONCRETE SPREADERS • TAMPING ROLLERS • VIBRATORS
CONCRETE BUCKETS • CLAMSHELL BUCKETS • TRUCK MIXERS • STRIPING MACHINES • TURNTABLES • ROAD FINISHERS • STEEL FORMS

## NATURAL CONDITIONS MAKE AIR LOCK PROTECTION IMPERATIVE

In those localities where the topography favors back-syphonage, installations of AIR LOCK Outdoor Fountains are recommended because the Air Lock prevents contamination of fresh water supply by pollution from stopped-up sewer.

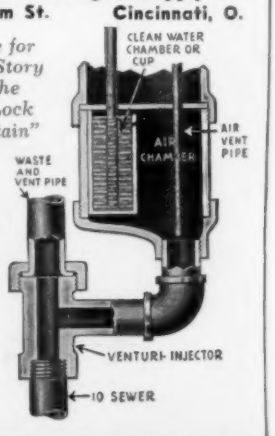
Don't ignore or treat lightly this menace to public health.

**The Murdock Mfg. & Supply Co.**
**426 Plum St. Cincinnati, O.**

MURDOCK "Air Lock"

Patent Pending

*Write for "The Story of the Air Lock Fountain"*




*Detail of Air Lock*

**MURDOCK**

SINCE 1833

The Most Reliable Name on Water Service Devices

NEW LITTLEFORD ROAD BROOM

*This new Model 106 traction-driven two-way road broom was announced recently by Littleford Bros., 443-457 East Pearl Street, Cincinnati, Ohio. The new model helps round out the Littleford line of brooms, including both power-driven and traction types. Among outstanding features of the Model 106 and other Littleford brooms is the hydraulic lift, which raises the brush all the way from the road for trailing purposes and makes possible a fine adjustment for sweeping action*

## *Catalog of Traxcavators in Action, Now Ready*

Thirty-seven field photographs of Traxcavators in action appear in the new catalog of the Trackson Company, 3343 South Chase Avenue, Milwaukee, Wis. In conjunction with engineering facts given in the technical specifications of the giant 2½-yard T7, ¾-yard T4, and ½-yard T2 models, these pictures tell the story of Traxcavator's modern dirt-and-material-handling methods.

The new catalog suggests ways of speeding up defense construction, and answers many of today's material-handling problems at manufacturing plants, steel mills, foundries, smelters, mines, quarries, chemical plants, material yards, etc. For a copy of the new Traxcavator Catalog No. 458, write to Trackson Company at the address given above.

## *Thomas F. Halpin, of A. P. Smith Mfg. Co., Dies*

Thomas F. Halpin, Secretary and Sales Manager of The A. P. Smith Mfg. Co. of East Orange, N. J., died on August 29, 1941, after an illness of five months, from heart disease. Mr. Halpin has been connected with the Smith organization since 1900, when he joined the firm as a clerk. In July, 1939, he was appointed jury commissioner after having previously served as a Federal Jury Commissioner. Earlier in life he was elected a member of the old Board of Works of Newark, N. J., during part of which time he served as Chairman of the Sewer Committee. Mr. Halpin was widely known in the water-works field, and highly regarded by his associates in the Water Works Manufacturers Association.

## *Clarence H. Kennedy Dies, Kennedy Valve Official*

Clarence H. Kennedy, Vice-President in Charge of Sales of The Kennedy Valve Mfg. Co., Elmira, N. Y., died on July 21, 1941, in his home city, after an illness of eight months. After graduating from Cornell University as a mechanical engineer in 1912, he spent his entire business career with the Kennedy Valve Mfg. Co., founded by his father in 1877. After working through the ranks in several factory departments, he was successively Manager of the New York Branch, and Sales Manager of the company, and had been Vice-President in Charge of Sales since 1929.


Squeezes Water Uphill

THIS helical chrome rotor lifts water without impellers, plungers, pistons or valves. Neither a turbine pump nor plunger pump, it combines the advantages of both in a highly efficient, compact unit, easy to install, service and keep running. No priming or pre-lubrication is necessary. Rotates at half the usual turbine pump speed. Capacity—500 to 3500 gallons per hour. Maintains maximum desirable head pressures. For installation in wells as small as 4" in diameter with maximum lifts. Small variation in capacity regardless of lift or pressure. Any form of drive. For further information write Peerless Pump Division, Food Machinery Corp., 301 West Avenue 26, Los Angeles, California.



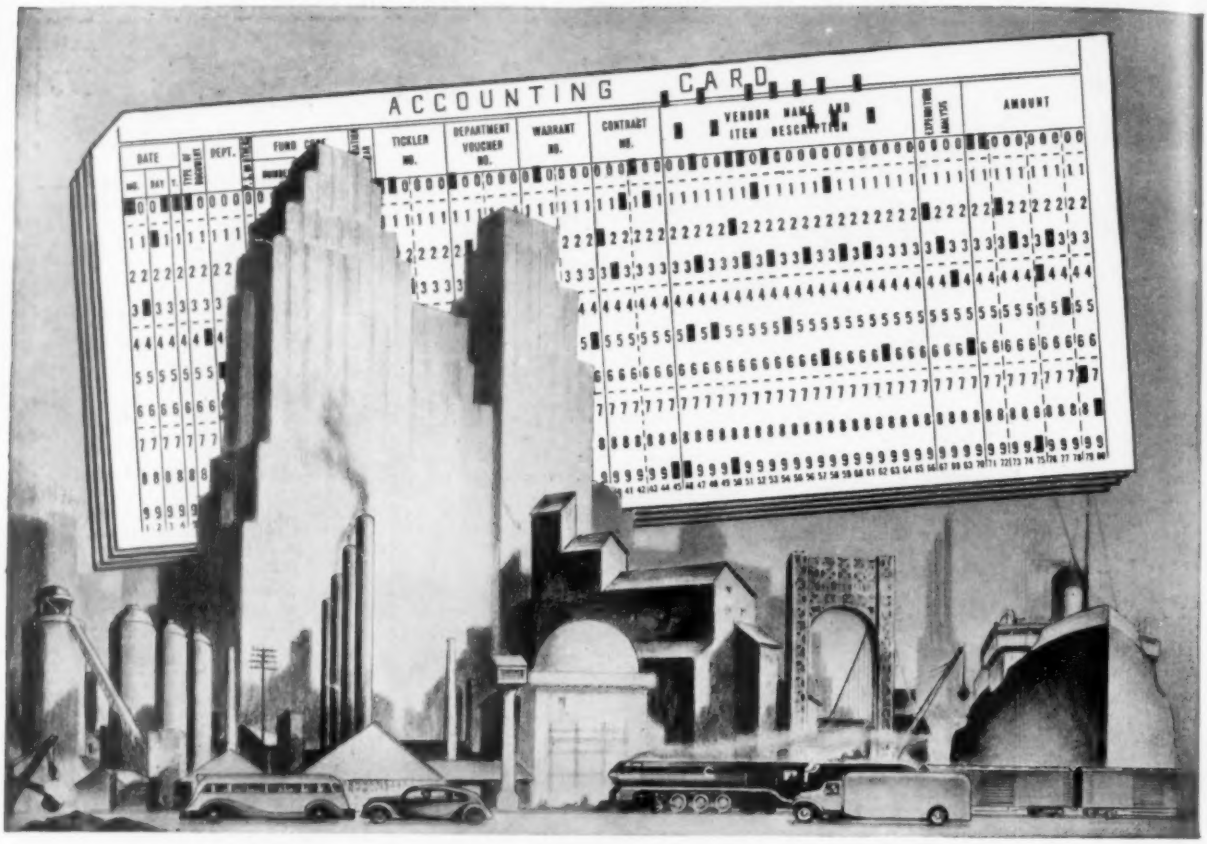
1879-ROSS-1879
AUTOMATIC VALVES

ALTITUDE VALVES
for
Control of elevation and heads into and out of tanks, basins and reservoirs.
1. Single acting.
2. Double acting.
3. Combination assembly for three or more automatic operations.

REDUCING VALVES
for
Maintaining desired discharge pressure regardless of change in rate of flow.
1. Pressure reduction only.
2. Pressure reducing and reverse flow.
3. Combination assemblies —for control of pressure at inlet and outlet of valve.

SURGE-RELIEF VALVE
for
Maintaining safe operating pressures for conduits, distribution and pump discharge.

Ross Valve Mfg. Co.
INCORPORATED
P. O. Box 596 Troy, N. Y.




# Get all the accounting facts of all departments *through punched cards*

The Punched Card Method of Accounting provides government administrators with up-to-the-minute fact-pictures of activities, thus enabling them to maintain closer control. This modern method is now being successfully applied to the governments of many important American cities. The following is a partial list of the municipal departments whose work today is being facilitated by punched card accounting:

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| POLICE | SANITATION | PUBLIC HEALTH |
| EDUCATION | CENTRAL ACCOUNTS BUREAU | PURCHASES |
| TAXES AND ASSESSMENT | COMPTROLLERS | LIBRARY |
| FINANCE | PARK DEPARTMENT | PUBLIC WORKS |
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Investigate the advantages in speed, accuracy and economy which this modern method offers your city government. Your nearest International Business Machines representative will be glad to give you complete information. Call him today.

## INTERNATIONAL BUSINESS MACHINES CORPORATION

*Offices in* Principal Cities

When you write for that catalog, kindly mention THE AMERICAN CITY.

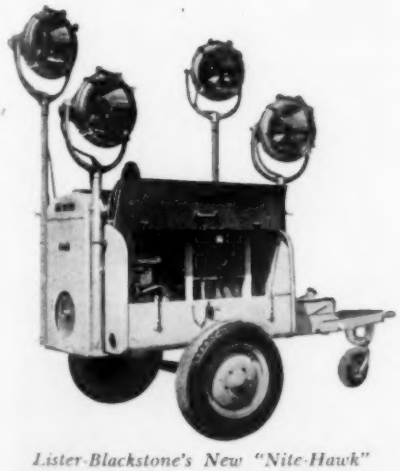
*First "Contingent" of the 151 A-W Patrol Sweepers Recently Ordered by the War Department*

## *A-W Patrol Sweepers Go to Army Air Bases*

The accompanying illustration shows the first fifteen of a large U. S. War Department order of Austin-Western Patrol Sweepers, photographed in front of the company's general offices in Aurora, Ill., before being shipped out to United States flying fields for active duty.

These sweepers are a modern product, developed to meet the street-sweeping problems of large and small cities, where heavier and faster-moving traffic requires more rapid and more satisfactory street-cleaning methods. Their subsequent operation at U. S. Government flying fields and air bases have made them leading units in the national defense program.

In 1939 the War Department purchased one machine, carefully investigated its possibilities and observed its operation. In 1940 the Department purchased seven more. Recently 151 additional units were ordered, convincing proof that these machines are giving real satisfaction.



*Lister-Blackstone's New "Nite-Hawk" Unit for Emergency Flood-Lighting*

## *New Portable Floodlight by Lister-Blackstone*

"Nite-Hawk," a new portable floodlight unit easily towed by an auto or small truck, built to give you light "where you want it—when you want it," is now being placed on the market by Lister-Blackstone, Inc., 1706 South 68th Street, Milwaukee, Wis. It is a fully self-contained source of light, and fills the need where power lines are unavailable or where the connection and set-up would be too expensive. The manufacturers especially recommend its use for night operations such as construction work of all types, emergency airport lighting, police and fire department calls, dock, terminal and warehouse lighting, in quarries and gravel pits, in parks—or any place where light is needed.

The unit consists of four 1,000-watt wide-angle floodlights, one on each corner, which cast powerful beams in the same or different directions. Each light is individually operated from a control panel, and is adjustable up and down and in all directions. The lights may be raised to a height of 8 ½ feet and swung in a 180-degree vertical arc. The control panel is also equipped with receptacles for operating small "Universal" hand tools such as electric drills, saws and hammers. Power is supplied by an air-cooled, 14-hp Le Roi engine, equipped with an electric starter. A 5,000-watt self-regulating d.c. generator, connected to the engine, delivers direct current at 110 to 120 volts, the voltage being adjustable by means of a rheostat located on the control panel.

A sheet steel enclosure with hinged side covers houses the entire assembly, including large tool-boxes. The unit is mounted on heavy-duty, multiple-leaf steel springs, with two pneumatic-tired wheels. A retractable caster wheel is provided, enabling one man to move the unit about the job with ease; and the outfit is quickly and easily hitched to a towing vehicle. The unit is 7 feet high with lights down, 5 feet wide, 9 feet 4 inches long.

**PREPARE FOR EMERGENCIES WITH**

M H

VALVES
HYDRANTS
AND WATERWORKS ACCESSORIES

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 34.

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

**EMERGENCY WATER SUPPLY QUICKLY AT LOW COST!**

A GRIFFIN WELLPOINT SYSTEM installed in three days in water bearing sand will deliver

**1,000,000**

GALLONS OF FILTERED WATER PER DAY OR MORE

to suit your special needs for drinking, fire, industrial, swimming pools, etc.

TEMPORARY *RENTED* OR PERMANENT *SOLD*

*Municipalities have been using this economical system successfully for years. Ask us at once for full particulars giving your requirements.*

GRIFFIN WELLPOINT CORP.
729 E. 140th St., New York, N. Y.
Phone MElrose 5-7704-5

The ULTIMATE in ...
PUBLIC PROPERTY PROTECTION

The best protection you can buy for all public property is a Stewart Iron or Chain Link Wire Fence. Stewart Fences beautify as well as protect, and offer a lifetime of dependable, low-cost service. Before buying investigate the exclusive features of Stewart Fences. It will be to your advantage to do so.

Other Stewart Products for public property: Settees, Steel Folding Chairs, Wire Mesh Partitions, Trash Cans, Flag Poles, Bronze Plaques and many others. When requesting literature, please mention products in which you are interested. Sales and Erection offices in principal cities.

*"Fence Builders to America Since 1886"*

The Stewart
Iron Works Co., Inc.
821 Stewart Block
Cincinnati, Ohio

Stewart IRON and WIRE FENCES

CHICAGO WILL SAVE
$400,000 Per Year

The cost of removing garbage and ashes in Chicago was 18 cents a cubic yard lower in February 1941 than for the same month last year—at this rate Chicago will save $400,000 for 1941. Oscar E. Hewitt, commissioner of public works, attributes this saving to the use of Heil Conveyor Sanitation Units.

Municipalities both large and small are finding that modern Heil sanitation units cut collection costs.

Write or wire for complete details today!

THE HEIL CO.
MILWAUKEE, WISCONSIN HILLSIDE, NEW JERSEY

ONE MAN DOES
the work of MANY

Sprinkle on your drives, road shoulders, parking areas, tennis courts, sand traps—weeds shrivel, die.

DOLGE WEED-KILLER

THE C. B. DOLGE CO. WESTPORT CONN.

Keep your CITY Heater and Cleaner

SOLAR SELF-CLOSING RECEPTACLES

Keep your streets and parks free from waste and litter. Put a Solar Receptacle at every point where rubbish accumulates. All-steel, fire-proof and vermin-proof. Solars soon pay for themselves in savings.

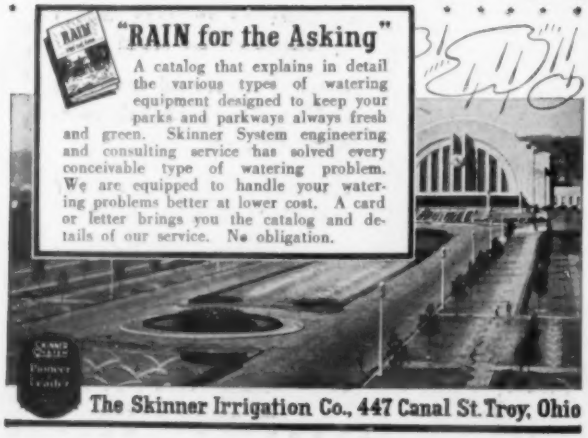
*Send today for attractive booklet and prices.*

SOLAR-STURGES MFG. CO.
MELROSE PARK, ILL.



"RAIN for the Asking"

A catalog that explains in detail the various types of watering equipment designed to keep your parks and parkways always fresh and green. Skinner System engineering and consulting service has solved every conceivable type of watering problem. We are equipped to handle your watering problems better at lower cost. A card or letter brings you the catalog and details of our service. No obligation.



The Skinner Irrigation Co., 447 Canal St. Troy, Ohio

IN WATER PLANTS

Raw Water Aeration
Quick Chemical Mixing
Coagulant Mixing
Contact Mixing
Recarbonation
Filtered Water Aeration

IN SEWAGE PLANTS

Activated Sludge Aeration
Trickling Filter Auxiliary
Mixing for Chemical Precipitation

"Jung Suction"
AERO-MIX
AERATOR - MIXER

A type and capacity to fit every existing or contemplated plant.

Gravity—Rotary
Pneumatic—Pressure

Write for illustrated folder.

Vogt Mfg. Co. Inc.
P. O. BOX 1122
LOUISVILLE - - KY.

REFUSE-GETTERS USED FOR STREET SWEEPINGS

*These two Elgin Refuse-Getters were recently installed in Oakland, Calif., to be used for disposing of street sweepings. Left to right, L. H. Taylor, Engineer of Maintenance; W. F. Gibson, Superintendent of Street Cleaning; James C. Ready, Superintendent of Equipment Maintenance*

## *New Method Removes Abandoned Car Tracks*

Indications are that a tightness in available scrap, especially of the proper grade, is becoming a serious threat to the national defense program through forcing a curtailment of steel ingot production. In the light of this condition, municipalities may well give thought to the thousands of tons of scrap rail that can be obtained by the removal of abandoned street-car tracks now embedded, unused, in the streets of hundreds of cities throughout the country. The Linde Air Products Co., 30 East 42d Street, New York, reports these rails can be removed economically through a recently developed method using a portable, oxyacetylene cutting machine.

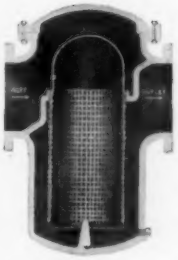
This simple and high-speed method of cutting permits removal of the rail without breaking adjacent pavement, even when material has been laid flush with the top of the rail. Repaving costs are kept at a minimum, and the cost of removal may be more than covered by the sale of the scrap rails. In this method, the cutting machine is positioned on a special track; and two or more sections of such a track can be used so that the cutting operation can be carried on continuously. The cutting blowpipe of the machine is equipped with a bevel-cutting nozzle, and a single cut is made at an angle along the groove of the rail so that the top of the rail is severed from the web in two longitudinal sections. The cut rail can then be easily removed with a pinch bar.

The accompanying illustration shows the cutting machine in operating position.

*A portable oxyacetylene machine cuts away unused street-car rails*

See page 73 of our new 96-page catalog for information on this

WATER STRAINER



Clean water at all times, without silt, leaves or any other foreign matter, is obtained with this Strainer, furnished with a strainer basket of any desired mesh. The strainer basket is always supplied oversize, to reduce the need for frequent cleaning. Also, it is possible to install the strainers in parallel formation, so that either unit may be in service while the other is being cleaned—thus avoiding any shutdown or delay.

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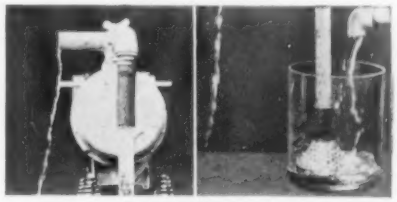


FOR SEEPAGE

Being completely self-priming, a Homelite can bring itself right down to a trickle—keeping seepage at strainer level at all times *automatically*. Moreover it has a suction lift of 28 feet, *guaranteed*.

FOR WATER THICK WITH SOLIDS

No choking up with a Homelite. It handles 35% solids—sludge, sewage, muddy or sandy water without clogging. There's no time out for cleaning. No delays. A Homelite Pump is built to do the kind of pumping you want day in and day out without trouble.

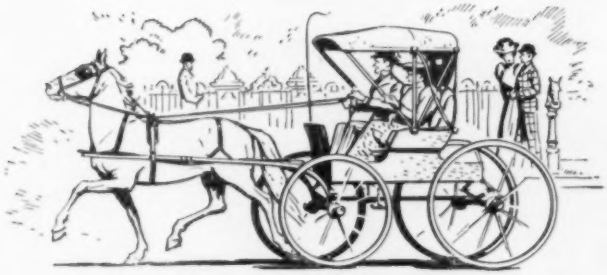
*Send for bulletin*

Homelite CORPORATION
209 Riverdale Ave. Port Chester, New York

COURTHOUSE SQUARE, BELLEFONTAINE, OHIO

# First Concrete Street in America

## *Celebrates Fiftieth Anniversary*



Horseless carriages had not yet appeared when (in 1891) the village council of Bellefontaine, Ohio, warily and doubtfully authorized the paving of the streets of Courthouse Square with a new-fangled material called "concrete." Folks doubted whether it would stand up under heavily shod horses and the grinding of iron-tired buggies and wagons. But a local concrete enthusiast posted a bond that the pavement would last five years, so the officials took a chance.

This concrete pavement has served *not five years, but fifty*—and seems good for many more years. Here was demonstrated for the first time in America a type of pavement which has contributed much to modern highway transportation. Since this street was built, concrete has been chosen for enough streets and roads to pave *a 4-lane express highway 2½ times around the world at the equator.*

Here, too, is a perennial reminder that concrete is the real low cost pavement for motor traffic. Pave and save with concrete on your roads and streets.

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A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

During September we hope you will remember to mention THE AMERICAN CITY.

PEERLESS PUMP DIVISION
Food Machinery Corporation
Canton Works, Canton, Ohio

## *Peerless Pump Division Has New Eastern Plant*

Announcement has been made by the Peerless Pump Division of the Food Machinery Corporation of the removal of its eastern offices and manufacturing facilities from Massillon, Ohio, to a new and modern plant located at 1250 Camden Avenue, S. W., Canton, Ohio. The new plant, necessitated by very substantial defense pump orders and steady increases in national and international sales, makes available a total of approximately 55,000 square feet of floor space devoted to complete pump engineering, manufacturing, testing and sales.

The building is of modern structural steel design, has three heavy-lift crane bays for handling stepped-up production, and is completely air-conditioned. Peerless Pump's entire line will be manufactured here, including turbine pumps, propeller type pumps, and the Peerless Hi-Lift. The Canton plant is patterned after Peerless' new and modern western manufacturing plant at 301 West Avenue 26, Los Angeles, Calif., and remains under the same general management as that plant, Vernon Edler being Vice-President and General Manager.

## *Newsom and Aldrich Partnership Announced*

Reeves Newsom, engineer-consultant, of 500 Fifth Ave., New York City, announced recently that E. H. Aldrich, his principal associate since early in 1938, has become his partner in the firm of Newsom and Aldrich. Mr. Aldrich has for over twenty years been active in the fields of sewerage and water supply. Following five years as City Engineer of Wisconsin Rapids, Wis., he was for two years with Morris Knowles, Inc., as designing and supervising engineer, and for three years was connected in a similar capacity with Nicholas S. Hill, Jr.

Following this, Mr. Aldrich went to China as consulting engineer for Lingnan University, Canton, in the design and construction of complete works for water supply, electric power and sewerage. Returning to the United States, he was on the staff of the Public Service Commission of New York State as engineer in water-rate cases, and later became Chief Civil Engineer of the Community Water Service Co. and its 43 subsidiary companies, of which group Mr. Newsom was President.

In addition to his wide experience in the design and construction of sewerage, sewage-treatment and water-supply works, Mr. Aldrich, in association with Mr. Newsom, has done a considerable amount of original work in the investigation of the mortality survival of water-works facilities and the determination of factual bases for the depreciation of such works.


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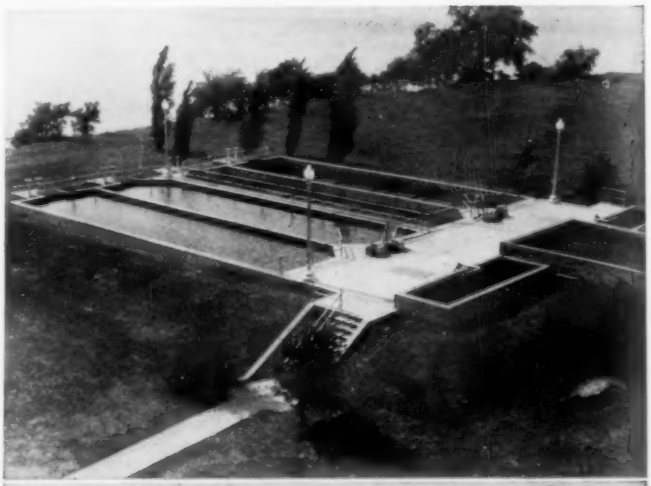
# Calcium Chloride

## Used In The Mix To Speed Up and Protect Winter Construction of Sewage Plant

During winter construction of this most modern sewage disposal plant at Washington, D. C., specifications required the use of calcium chloride whenever temperatures were expected to reach 50° Fahrenheit or lower.



Research shows that concrete containing calcium chloride placed at air temperatures 44-48° acquired necessary stiffness for finishing in almost exactly the same time as plain concrete placed at ideal air temperature 70°. The addition of calcium chloride thus makes up for the lag in setting time which occurs when plain concrete is placed in cold weather. This acceleration of set shortens the time when cold weather protection and covering are necessary.

Concrete containing calcium chloride had 675 lbs. transverse strength at 3 days as against 415 lbs. for plain concrete—a gain of 63% in strength through use of calcium chloride. This high early strength gets concrete out of danger quickly.

Write for bulletins covering the use of calcium chloride in cold weather concreting and where speed and quality are important.

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**CALCIUM CHLORIDE**
***YEAR 'ROUND CONCRETE CONSTRUCTION***

*W. B. Marshall*

## *Chain Belt Announces Shifts in Personnel*

Several promotions and changes have recently been announced by Chain Belt Co., 1600 West Bruce Street, Milwaukee, Wis. W. B. Marshall, who has been Assistant Sales Manager of the Conveying and Engineering Products Division of the company, has been made Sales Manager of that Division. Mr. Marshall has been with the company since 1920. Besides being Assistant Sales Manager, he has been in charge of the development and sales of sanitation equipment, and has also had experience in field sales work. He was a graduate of Sheffield Scientific School of Yale University in 1921.

Another change brings B. E. Sivyer, former San Francisco Branch Manager, to Milwaukee as Assistant Sales Manager of the Chain Belt and Transmission Division. Mr. Sivyer has been with Chain Belt Co. for ten years, and of that time spent 4½ years in San Francisco. He attended the University of Wisconsin.

Replacing Mr. Sivyer as Branch Manager at San Francisco is S. Y. Warner, who joined Chain Belt Co. in 1930, the same year he was graduated from Sheffield Scientific School of Yale University. Mr. Warner has recently been in the company's Los Angeles office and the California oil fields.

## *Wm. J. Herron Joins Worthington-Gamon*

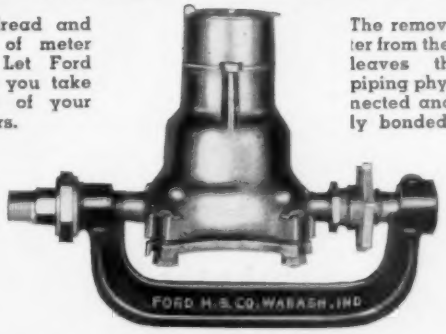
William J. Herron has joined the Worthington-Gamon Meter Co., Harrison, N. J., as its representative in New York State, it was announced recently. He will also collaborate in developments and investigations conducted in the enlarged laboratory of the company.

For eighteen years Mr. Herron represented the National Meter Co. in New York State, maintaining an active interest in A.W.W.A. affairs in that territory. He is also a member of the A.S.M.E. and the New York State Society of Professional Engineers, has written several technical papers, and is author of "Romance of the Water Meter," published in *Water Works Engineering* in 1930. Prior to his association with National, he was with the American Chain Co. and the American Carbolite Co. as a Mechanical Engineer.


**FORD YOKES**

Take the dread and delay out of meter changing. Let Ford Yokes help you take better care of your water meters.

The removal of a meter from the Ford Yoke leaves the service piping physically connected and electrically bonded.




The Straight Line Yoke is made both with and without a valve. Shown above is the plain type with union having male thread swivel for screwing into service valve. This makes a most satisfactory setting for basements and for shallow curb installations. Free samples are available.

WRITE FOR CATALOG.

**FORD METER BOX CO.,**

*SETTING AND TESTING EQUIPMENT FOR WATER METERS*

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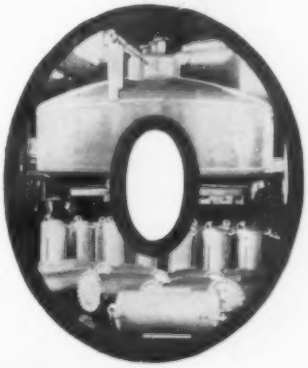

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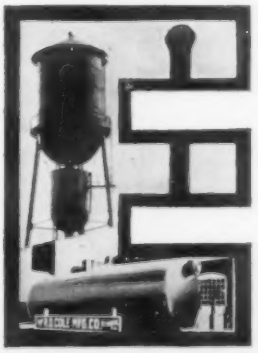

*Write for "Tank Talk" — 6-A, or let us figure on your requirements.*

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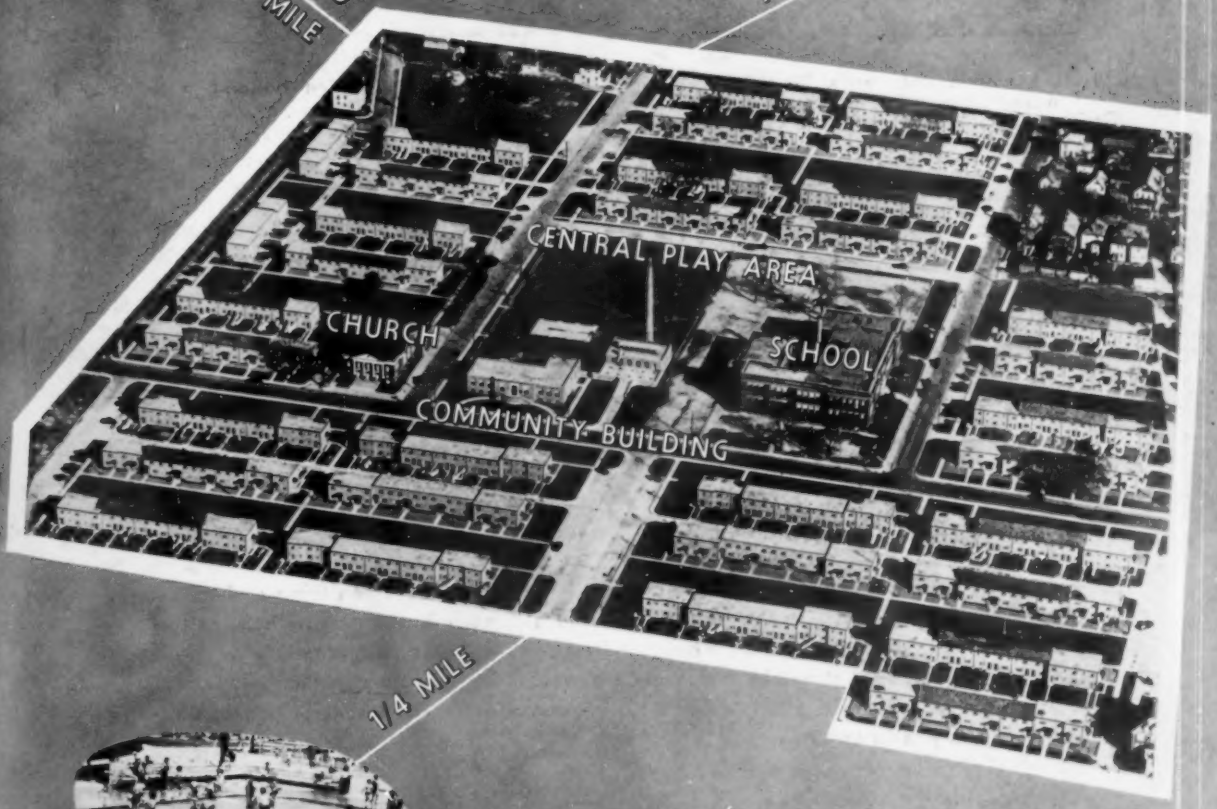
# The American City

PLAYFIELD

1/2 TO 1 MILE

PARK AREA

1 TO 2 MILES




1/4 MILE

NEIGHBORHOOD PLAYGROUND

**Provision of recreational facilities within low-rent housing sites, and location of projects for access also to existing play areas, are recommended by the United States Housing Authority.**

***Several articles in this issue point to urgent shelter needs of defense workers, and to the importance of planning such housing and essential utilities to serve long-time community needs. Ample opportunities for wholesome fun, both for enlisted men and industrial employees, are essential to morale and efficiency.***